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SCIENCE

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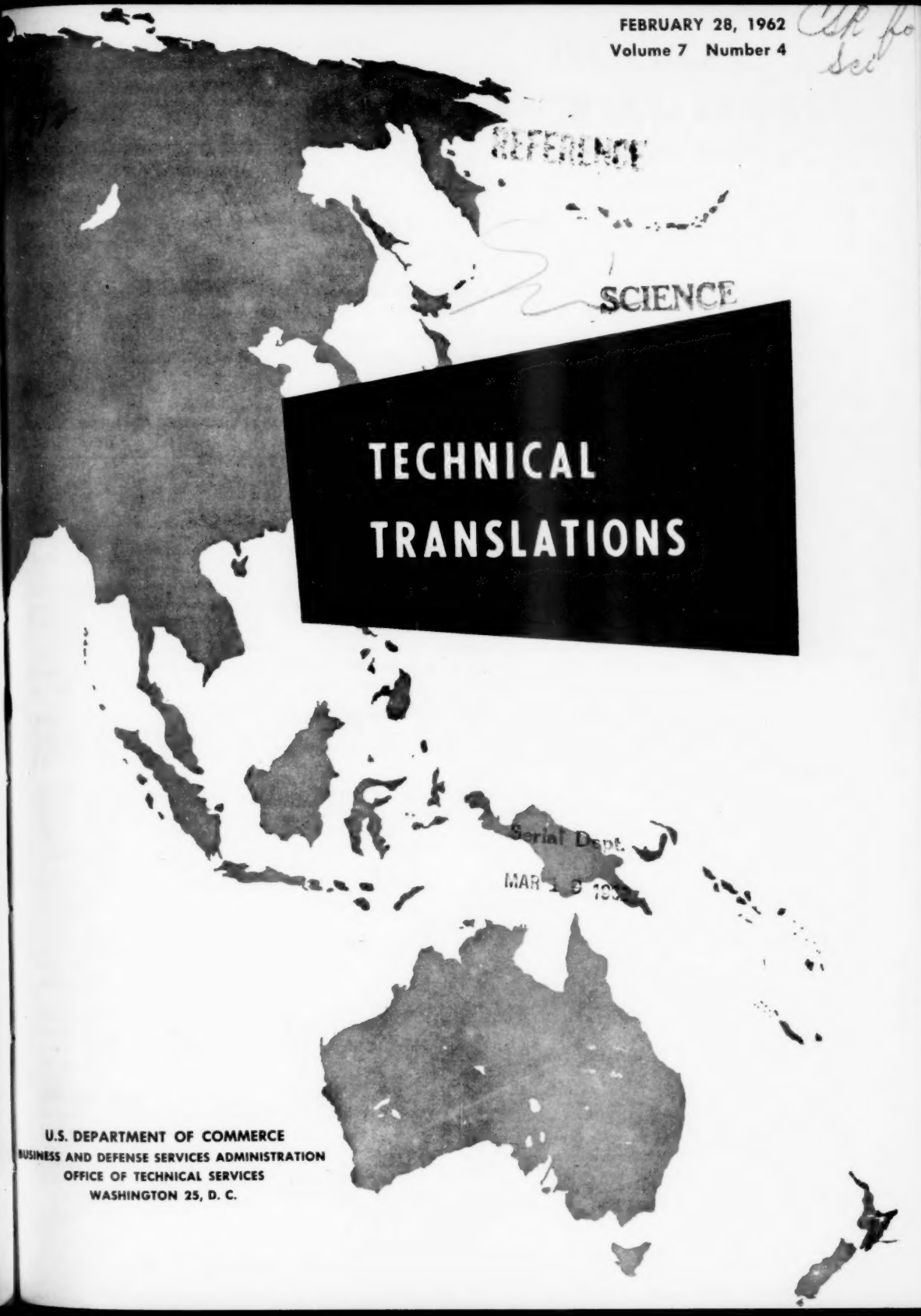

Serial Dept.
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U.S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

BUSINESS AND DEFENSE SERVICES ADMINISTRATION

Office of Technical Services
John C. Green, Director

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UNITED STATES DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
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TECHNICAL TRANSLATIONS

Volume 7, Number 4 Pages 177 - 241 February 28, 1962

*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

ANNOTATED LIST OF SCIENTIFIC AND TECHNICAL PERIODICALS, 1961. 20 Aug 61, 26p.
Order from OTS $10.10 62-11091

DESCRIPTORS: *Periodicals, *Bibliography, Reports, Scientific reports, China

NLL TRANSLATIONS BULLETIN, 1961, VOL. 3, NO. 10, P. 823-917. Oct 61, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports on visits, translations available from N. L. L. loan collection and trans. of #Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 3, p. 12-26; and from Ekonomicheskaya Gazeta (USSR) 1961, 13 June, p. 2-3.
#Another trans. is available from OTS $0.50 in 61-31517, JPRS-8558, 3 Aug 61, 68p.

DESCRIPTORS: *Translations, *Scientific reports, *Bibliography, Scientific organizations, Research program administration, Scientific research, USSR.

Contents:
#On the results of scientific activity and the application of completed scientific works of the Academy of Sciences of the USSR in 1960: report by the chief scientific secretary of the Presidium of the Academy of Sciences of the USSR, by E. K. Fedorov
Problems of organization of scientific work, by M. N. Keldysh.

NLL TRANSLATIONS BULLETIN. 1961, VOL. 3, NO. 11, P. 919-971. Nov 61, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports of visits, new additions, translations available from N. L. L. loan collection, and trans. of Khimicheskoe Mashinostroenie (USSR) 1961 [v. 3] no. 3, p. 1-2.

DESCRIPTORS: *Translations, *Scientific reports, Scientific research, USSR, Chemical industry, Chemical engineering, *Bibliography.

Contents:
New research activities at the MIKhMa: the Moscow Institute of Chemical Machine Construction, by D. T. Kokorev.

NLL TRANSLATIONS BULLETIN, 1961, VOL. 3, NO. 12, P. 973-1062. Dec 61, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports on visits, new additions, translations available from Lending Library Unit loan collection, and trans. of Byulleten Stroitel'noi Tekhniki (USSR) 1961, no. 5, p. 3-5; and ##Neftyanoe Khozyaistvo (USSR) 1961 [v. 39] no. 5, p. 7-12.
##Another trans. is available from OTS or SLA $1.60 as 61-28785, JPRS-8870, 14 Sep 61 [19]p.

DESCRIPTORS: *Translations, *Scientific reports, *Bibliography, USSR, Construction materials industry, Cements, Production, Well drilling, Drills, Design.

Contents:
Measures for the development of the cement industry
##Research and experimental design work on drilling.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Jan 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

Guilbot, A.
EXAMINATIONS OF STEROLESTERS IN CEREAL AND THEIR SIGNIFICANCE FOR THE DISCRIMINATION BETWEEN DURUM AND COMMON WHEAT.
25 Sep 61, 16p. 30 refs.
Order from SLA $1.60 61-20737

Trans. of Getreide u[nd] Mehl (West Germany) 1961, v. 11, no. 5, p. 49-53.

DESCRIPTORS: *Cereals, *Wheat, *Sterols, *Lipids, Esters

Kirsanov, A. T.
MOBILITY OF K IN THE SOIL AS AFFECTED BY PLANTS AND FERTILIZERS (Izmenenie Podvizhnosti k v Pochve pod Vliyaniem Rastenii i Udobrenii) tr. by M. Slade. [1961] [38]p. (foreign text included).
[CSIRO] Trans. no. 4734.
Order from OTS or SLA $3.60 60-17775

Trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii] Inst[itut] Udob[renii, Agrotekhniki i Agropochvedeniya, Moscow]. Leningr[ad Otdelenie]. Trudy (USSR) 1936, v. 45, p. 67-84.

DESCRIPTORS: Soils, *Potassium, *Fertilizers, Plants, Calcium compounds, Nitrogen compounds, Phosphorous compounds

Potassium introduced without other fertilizers remains almost unused by the plant, and 60 to 80% of it is converted into a non-exchangeable state. This conversion continued even in the fourth year of the experiment, when PN fertilizers were added. (Author)

Pressat, Roland.
THE DEMOGRAPHIC STRUCTURE AND FUTURE OF THE ACTIVE AGRICULTURAL POPULATION (Structure Demographique et Avenir de la Population Active Agricole). [1961] [17]p. 5 refs.
Order from SLA $1.60 61-20418

Trans. of Economie Rurale (France) 1958, no. 37, p. 3-8.

DESCRIPTORS: France, *Agriculture, *Population, Vital statistics, Economics.

Rumyantsev, V. I.
AN EXPERIMENTAL STUDY OF THE AGROTECHNICAL ROLE OF FIELD -PROTECTIVE FOREST STRIPS (Opyt Izucheniya Agrotekhnicheskoi Roli Polezashchitnykh Lesnykh Polos). 1961, 12p. 3 refs. PL-480 Agr.
Order from OTS $0.50 60-51004

Trans. of [Moskovskaya Sel'skokhozyaistvennaya Akademiya]. Izvestiya (USSR) 1958, no. 4 (23) p. 89-98

DESCRIPTORS: *Agriculture, Plants, Trees, *Forestry, *Fertility, Fertilizers, *Soils, *Moisture, Snow, *Erosion, Deserts, Water, Wind, Water entry.

Wind-penetrable shelter belts in the southeastern region contribute toward a more even distribution of the snow cover on the fields. In summer they are more effective for the reduction of dry winds when Siberian pea shrub is grown at lower levels. For the control of herbaceous vegetation in wind-penetrable shelter-belts with distances of 2.5 m within the rows, it is necessary to carry out periodic soil cultivation during the entire life of the shelter belt. The better accumulation of moisture in the soil in the zone in which the belt is effective and the wind-protective role of the latter increase the efficiency of organic and mineral fertilizers in summer. With the change of the growth environment of agricultural crops in the zone in which shelter belts are effective it became possible, for the first time under dry steppe conditions, to grow and obtain high yields of onions. Wind-impenetrable shelter belts have a great accumulation of snow in winter; if the strips alongside the belts, which have a non-mellow soil, are sown with crops, they are heavily overgrown by weeds and the yield obtained is lower than that obtained outside the zone of influence of the shelter belts.

Verige, S. A., Mastinskaya, S. B., and Razumova, L. A.
MOISTURE SUPPLY FOR SPRING WHEAT WHERE VIRGIN AND FALLOW LANDS ARE CULTIVATED. 10 Oct 61 [10]p. JPRS: 10360.
Order from OTS or SLA $1.10 61-28623

Trans. of Meteorologiya i Gidrologiya (USSR) 1955, no. 5, p. 3-8.

DESCRIPTORS: *Wheat, Soils, *Moisture, Agriculture, Plants, Cereals.

The character of water supply conditions of spring wheat is given on the basis of the dynamics of productive moisture reserves, expressed in millimeters of water layer thickness. The quantitative relations of the condition of spring wheat to productive moisture reserves were used to evaluate the moisture supply of wheat for the entire vegetation period. These quantitative relations were established by the authors on the basis of many years observations made jointly by agricultural and hydrometeorological stations on soil moisture conditions and the condition of crops. (Author)

Animal Husbandry

Kodinets, G. A.
SUPPRESSION OF BROODINESS IN HENS BY MEANS OF SHOCK TREATMENT (Ustranenie Proyavleniya Instinkta Nasizhivaniya u Kur pri Pomoshchi Elektroshoka). 1961, 5p. PL-480 Agr.
Order from OTS $0.50 60-51050

Trans. of Ptitsevodstvo (USSR) 1958, v. 8, no. 11, p. 26-29.

DESCRIPTORS: *Chickens, Electroshock, *Shock therapy, *Eggs, Food, Agriculture.

A 12-volt apparatus is used to induce convulsive paroxysm for a few seconds, followed by a state of shock which continues for one to three minutes. The deep shock is accompanied by a cessation of breathing and heart beat for a few seconds. The hen's normal condition is reestablished 2 or 3 minutes after the (Agriculture--Animal Husbandry, TT, v. 7, no. 4) shock, without any noticeable aftereffects. After the shock treatment, hens stop brooding and resume egg-laying in three to four days.

Protopopov, A.
INFRARED HEATING SYSTEM FOR PIGLETS (Ustanovka dlya Obogreva Porosyat Infrakrasnymi Luchami). 1961, 5p. PL-480 Agr.
Order from OTS $0.50 60-51065

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1960 [v. 20] no. 1, p. 30-31.

DESCRIPTORS: *Sivine, *Animal industry, *Body temperature, Heat production (Biology), *Infrared lamps, Incandescent lamps, Radiant heating panels.

MATERIAL OF UNITED SCIENTIFIC SESSION OF COTTON PRODUCTION, HELD IN TASHKENT, 15-21 OCT 57. [Dec 61] 705p. PL-480 Agr.
Order from OTS $7.25 60-51060

Trans. of mono. Materialy, Ob"edinennoi Nauchnoi Sessii po Khlopkovodstvu Sostoya'sheisya v g. Tashkente, 15-21 Okt 57, Tashkent, 1958.

DESCRIPTORS: Scientific research, *Cotton, *Plants, Agriculture, *Soils, Production, *Pest control, Diseases, Herbicides, *Irrigation systems, Economics, Growth, Tractors, *Agricultural machinery.

Contents:
Plenary session; introduction and appearance
Sectional meetings
Increase of soil productivity and effects on cotton
Preparation of land and care of cotton
Protection of cotton from agricultural pests, diseases, and weeds
Mechanization and electrification of cotton production
Hydrotechnology of irrigation and land reclamation
Economics and organization of cotton production.

Banasevich, N. N. and Zakharov, N. G.
FIXATION OF SANDS BY MEANS OF BITUMINOUS EMULSION (Zakreplenie Peskov Bitumnoi Emulsiei). 1961, 5p. PL-480 Agr.
Order from OTS $0.50 60-21870

Trans. of Sovetskaya Agronomiya (USSR) 1940 [v.2] no. 10, p. 64-65.

DESCRIPTORS: Deserts, *Sand, Stability, *Bitumens, Effectiveness, *Plants, Growth

Experiments since 1935 have shown that the mobile sands of deserts and arid regions can be planted and that scattering of sands prior to the plants becoming established can be prevented by covering the sands with a film of bitumen.

Berenyi, D.
TOBACCO CULTIVATION IN HUNGARY WITH SPECIAL ASPECT OF THE COUNTY OF SZABOLOCS. [1961] [22]p.
Available on loan from SLA 62-10390

Trans. of unidentified Hungarian mono., n. p., n. d.

DESCRIPTORS: *Tobacco, *Plants, Growth, Processing, Agriculture, Hungary.

Bondarenko, G. K.
INHERITANCE OF WINTER-HARDINESS IN WINTER WHEAT CROSSES (Nasledovanie Zimostoikosti pri Skreshchivanii Ozimykh Pshenits). 1961, 4p. 3 refs. PL-480 Agr.
Order from OTS $0.50 60-51057

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 67, no. 1, p. 153-155.

DESCRIPTORS: *Genetics, *Wheat, *Ecology, Temperature, *Climatic factors, Resistance, Reproduction

In crosses, in which one parent is low in winter-hardiness, the number of wintered plants in F_2 and F_3 was considerably less than in combinations of winter-hardy varieties. The analysis of wintering characteristics of various combinations in F_2 and F_1, F_2, F_3, shows that the creation of new, highly winter-hardy varieties should proceed in the direction of hybridization between plants, which have shown high winter-hardiness under changing external environmental conditions, or hybridization of winter-hardy forms with medium winter-hardy varieties. In such combinations there is an increase in the winter-hardiness of hybrid plants over that of parents. In crosses, where one of the parents has a low winter-hardiness, the segregation of winter-hardy plants appears in later generations and in lesser quantities than in combinations of highly winter-hardy forms. In inter-variety hybridization with open selective fertilization by the method of Academician T. D. Lysenko, an even higher degree of winter-hardiness can be expected in progeny from crosses, in which donor varieties which are high-yielding and winter-hardy under the above conditions are used for the pollination of a better regionized variety. (Extracted)

Kazanskii, A. N. and Kachanova, E. R.
A DANGEROUS VIRUS DISEASE OF ALFALFA IN KAZAKHSTAN (Opasnoe Virusnoe Zabolevanie Lyutserny v Kazakhstane). 1961, 8p. 4 refs. PL-480 Agr.
Order from OTS $0.50 60-51056

Trans. of Sovetskaya Agronomiya (USSR) 1952, v. 10, no. 6, p. 60-67.

DESCRIPTORS: *Virus diseases, *Grasses, Growth, *Worms, Seeds, DDT, Hexachlorocyclohexanes, *Pest control

Khvedelidze, M. A.
ON THE QUESTION OF BIOELECTRICAL POTENTIALS IN PLANTS (K Voprosu o Bioelektricheskikh Potentsialakh Rastenii). 1961, 95 refs. PL-480 Agr.
Order from OTS $0.50 60-51031

Trans. of Uspekhi Sovremennoi Biologii (USSR) 1958, v. 46, no. 1(4), p. 33-47.

DESCRIPTORS: *Plants, Biophysics, *Dosimeters, Metabolism, Nervous system, Growth, Electric properties, *Electric potential, Tissues (Biology), Cells (Biology), *Oxidation-reduction reactions, *Hydrogen ion concentration, *Electroosmosis, Electrophoresis.

A literature survey shows that bioelectrical potentials of plants are closely connected with the life-processes occurring in them; they are prone to changes both in their absolute magnitude, with respect to sign, and also in the nature of the periodicity. This is of great importance in the elaboration of electrodiagnostics and dosimetry of stimulating electrophysical agents. Apparently, the rhythmical fluctuations in the BEP have a general biological significance; moreover, depending on the level of development of the living organism, this activity is characterized by its own peculiarities. The

amplitude of the electrical fluctuations diminishes as we pass from the lower vegetative organisms to the nervous system of higher animals, whereas the frequency of fluctuation of the BEP tends to increase.

Molchanov, A. L.
THE TEMPERATURE AND HUMIDITY OF THE AIR AND THE SOIL TEMPERATURE IN FIELDS BETWEEN THE SHELTER BELTS (Rezhim Temperatury i Vlazhnosti Vozdukha i Temperatury Pochvy na Mezhpolosnykh Polyakh). 1961, 11p. 14 refs. PL-480 Agr.
Order from OTS $0.50 60-21898

Trans. of Kazakh[skii Nauchno-Issledovatel'skii] Gidrometeorol[ogicheskii] Inst[itut]. Trudy (USSR) 1956, v. 7, p. 57-65.

DESCRIPTORS: Air, *Soils, Temperature, Humidity, *Plants, Growth, Moisture, Climatic factors, Agriculture

In 1950, 1951, 1952, and 1953 the moisture and temperature of the air and soil in fallow fields and in fields sown with agricultural crops was measured in interstrip fields (at the Dokuchaev Institute of Agriculture) and in fields on the open steppe (at the Karl Marx Kolkhoz). The same crops were being grown on the planted fields between the forest strips as on those on the open steppe. On the interstrip fields (1) extremes in the soil and air temperatures were lower and the climate was more temperate, (2) soil temperature was lower and the relative air humidity was higher, and (3) on cool summer days the temperature of the air layers near the ground was higher. Thus, conditions in fields between shelter belts were more favorable for the germination and growth of cultivated crops than conditions on the open steppe. The moderating effect of the forest strips is especially favorable in the dry-steppe and semidesert zones of Kazakhstan, with its hot summers. Afforestation of broad tracts in the steppe regions of the European and Asian parts of the USSR will greatly improve the climate of these regions.

Oganesyan, A. P.
SALT TOLERANCE IN PERENNIAL GRASSES (O Soleustoichivosti Mnogoletnikh Trav). 1961, 7p. PL-480 Agr.
Order from OTS $0.50 60-51046

Trans. of Sovetskaya Agronomiya (USSR) 1953 [v. 11, no. 5] p. 75-80.

DESCRIPTORS: *Grasses, *Soils, *Salinity, Ecology, Chlorides, Sulfates

The following scale of chloride-sulfate salinity of soils according to their effect on seed germination and on the behavior of plants during the period of their development is proposed: (1) Solonchak soil, containing in the solid residue 1.5 to 2% of salts but no more; solonets couch grass, couch grass (Agropyron repens) and sloughgrass (Beckmania) can be grown; (2) highly saline soil, containing from 1.0 to 1.5% of salts in solid residue; crops of the first group develop well and seedlings of annual rye grass, meadow fescue and spotted bur clover can be obtained at a moisture content exceeding that of mature soil; (3) moderately saline soils, containing from 0.6 to 1.0% of salts; if the moisture in the seed-bed exceeds the moisture of mature soil, normal seedlings of tall oat grass (Arrhenatherum elatius), orchard grass (Dactylis glomerata) Agropyron nevskii, local lucerne, Persian clover, millet and summer wheat can develop; (4) weakly saline soil, containing from 0.3 to 0.6% of salts; the fall sowing yields normal seedlings which develop well in the case of rye grass, rhizomeless couch grass (Agropyron tenerum Vasey) and orchard grass; and (5) non-saline soils, containing less than 0.3% of salts; all crops are easily cultivated. The development and yield of plants depend on the conditions and the biological peculiarities of the crops. If ecological conditions do not suit the normal development of the crop, it hardly tolerates even a slight salinity, whereas the same crop, under different, better conditions is capable of enduring considerable salinity.

Romashov, N. V.
LAWS GOVERNING FRUITING IN OAK (Zakonomernosti Plodonosheniya Duba). [Dec 61] 17p. 21 refs. PL-480 Agr.
Order from OTS $0.50 60-51001

Trans. of Botanicheskii Zhurnal (USSR) 1957, v. 42, no. 1, p. 41-56.

DESCRIPTORS: *Trees, Reproduction, Mitosis, *Pollen, Growth, *Seeds, Forestry.

A thick undergrowth is an important factor in reducing the quantities of acorn pests in the plantations, and the introduction of various kinds of underbrush among the oak cultures is indispensable. The formation, by thinning, of stands and groups of simultaneously blossoming oaks (within which trees with only 3 to 5 days discrepancy in their time of leaf-unfolding are left) will insure better pollination and a high concentration of pollen at blossoming time. The leaf-eating pests, not only weaken the trunk with an effect, first of all, on fruit bearing, but they also destroy the flowers of the oak directly.

Shumanov, E. A.
DISEASES AND INJURIES IN YOUNG OAKS IN THE BORISOGLEBSK FOREST AREA (K Voprosu o Boleznyakh i Povrezhdeniyakh Molodogo Duba v Borisoglebskom Lesnom Massive). 1961, 23p. 29 refs. PL-480 Agr.
Order from OTS $0.50 60-51011

Trans. of Akademiya Nauk SSSR. Institut Lesa. Trudy, 1954, v. 16, p. 110-128.

DESCRIPTORS: *Trees, *Diseases, Botany, Mildew, *Fungi, Wasps, Beetles, Moths, *Rodents, Mice, Rabbits, Grasses, Injuries, *Insects, Forestry, Pathology.

See also 60-51020

Stark, V. N.
CAUSES DETERMINING THE MOVEMENT OF SOME SPECIES OF INTERNAL TRUNK PESTS IN FOREST AREAS (Prichiny, Opredelyayushchie Peremeshchenie Nekotorykh Vidov Skrytnostvolovykh Vreditelei v Lesonasazhdeniyakh). 1961, 15p. 2 refs. PL-480 Agr.
Order from OTS $0.50 60-51014

Trans. of Vsesoyuznyi Institut Zasnchity Rastenii. [Trudy] (USSR) 1954, no. 6, p. 116-132.

DESCRIPTORS: *Trees, *Pest control, Transportation, Butterflies, Beetles, Rusts, Moths, Parasites, Climatic factors, Forestry.

Stark, V. N.
THE POSSIBILITY OF CHEMICALLY COMBATING INTERNAL PESTS IN TRUNKS OF TREES AND SHRUBS OF THE FOREST-STEPPE ZONE (Vozmoshnost' Khimicheskoi Bor'by s Gruppoi Skrytnostvolovykh Vreditelei Dereve'ev i Kustarnikov Lesostepnoi Zony). 1961, 20p. 46 refs. PL-480 Agr.
Order from OTS $0.50 60-51015

Trans. of Vsesoyuznyi Institut Zashchity Rastenii. Trudy (USSR) 1954, no. 6, p. 133-150.

DESCRIPTORS: Plants, *Tress, *Pest control, Forestry, Moths, Beetles, *Insecticides, *Hexachlorocyclohexanes, *DDT, Forestry.

See also 60-51015

Vakin, A. T.
PHYTOPATHOLOGICAL CONDITION OF OAK GROVES IN THE TELLERMAN FOREST (Fitopatologicheskoe Sostoyanie Dubrav Tellermanovskogo Lesa). 1961, 6p. PL-480 Agr.
Order from OTS $0.50 60-51020

Trans. of Akademiya Nauk SSSR. Institut Lesa. Trudy, 1954, v. 16, p. 5-9.

DESCRIPTORS: *Plants, *Pathology, *Trees, Forestry, Fungi, Insects, Mildew.

Voloshin, V. D.
THE INFLUENCE OF FERTILIZERS CONTAINING CHLORINE COMPOUNDS OF POTASSIUM ON THE YIELD AND QUALITY OF YELLOW TOBACCOS. Degree thesis in the Faculty Agro-Chemistry and Soil Science. [1961] [29]p.
Available on loan from SLA 62-10391

Trans. of unidentified [Hungarian] (?) mono., n. p., n. d

DESCRIPTORS: *Tobacco, Growth, *Fertilizers, Chlorine compounds, Potassium compounds.

Zgurovskaya, L. N. and Tsel'niker, Yu. L.
THE INFLUENCE OF IRRIGATION AFTER A PROLONGED DROUGHT ON TRANSPIRATION AND ON THE CONDITION OF THE ABSORBING ROOTS OF ARBOREAL SPECIES IN THE DERKUL' STEPPE (O Vliyanii Poliva Posle Dlitel'noi Zasukhi na Transpiratsiyu i Sostoyanie Kornei u Drevesnykh Porod v Derkul'skoi Stepi). 1961, 10p. 11 refs. PL-480 Agr.
Order from OTS $0.50 60-51025

Trans. of Fiziologiya Rastenii (USSR) 1955, v. 2, no. 4, p. 346-353.

DESCRIPTORS: *Trees, Growth, Moisture, *Irrigation systems, Evapotranspiration, USSR, Soils

The increase in the transpiration rate caused by moistening of the soil after a drought varies in different species (the chereschaty oak [Quercus robur], sharp-leaved maple [Acer platanoides] and "downy" ash [Fraxinus pubescens]) according to the duration of the drought. After a less prolonged drought the rate of transpiration increases vigorously and rapidly. The longer the drought, the more delayed and weak is the increase in transpiration. The greatest difference in the reaction of transpiration to irrigation after drought of variable duration is observed in the downy ash. The difference in the reaction to irrigation of the oak and the sharp-leaved maple is not so great. The difference in the reaction of transpiration is because the roots become dormant during a prolonged drought. The increase in transpiration after an irrigation given during a prolonged drought takes place simultaneously with the restoration to a normal condition of the root apices (activation of the meristem). Root growth begins 4 to 5 days after the commencement of irrigation and continues, in some of the roots, for 5 to 7 days after the soil had dried to wilting point. (Author)

Zhidkov, K.
FROM TEAMS TO COMPLEX MECHANIZATION BRIGADES (Ot Zven'ev-k Brigadam Kompleksnoi Mekhanizatsii). 1961, 4p. PL-480 Agr.
Order from OTS $0.50 60-51063

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1960 [v. 20] no. 1, p. 15-17.

DESCRIPTORS: *Plants, Vegetables, Growth, *Agriculture, Automation, *Agricultural machines, Machines, USSR

Mechanization and automation in plant growing are described.

Zrazhevskii, A. I.
SOIL EROSION IN THE FOREST ZONE OF THE CARPATHIANS AND METHODS OF FIGHTING IT (Eroziya Pochv v Lesnoi Zone Karpat i Meropriyatiya po Bor'be s Neyu). [Dec 61] 6p. 9 refs. PL-480 Agr.
Order from OTS $0.50 60-51027

Trans. of mono. Vsesoyuznoe Soveshchanie po Bor'be s Eroziei Pochv [held] 1955. [Trudy, 1957] v. 6, p. 587-593.

DESCRIPTORS: Mountains, Forestry, *Trees, *Soils, Erosion, Countermeasures, USSR

ASTRONOMY

SOVIET BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NOS. 22-24. 30 Oct-1 Dec 61, 3 nos. JPRS-(10770, 11069, 11281)
Order from OTS $16.00/year 61-11147-(22-24)
foreign $20.00/year

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

DESCRIPTORS: Abstracting, Scientific research, *Astronomy, Meteorology, Oceanography, *Geophysics, *Upper atmosphere, *Astronautics, *Space probes.

Fyalko, E. I.
APPROXIMATE EXPERIMENTAL EVALUATION OF THE PROBABILITY OF METEORIC IONIZATION (Priblizhennaya Eksperimental'naya Otsenka Veroyatnosti Meteornoi Ionizatsii) tr. by H. H. 11 Aug 61, 3p. H-9278.
Order from OTS $0.50 61-31642

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii, Fizika (USSR) 1960, no. 1, p. 90-92.

DESCRIPTORS: Probability, *Meteors, *Ionization, Velocity, Atmosphere, Falling bodies, Functional analysis

An approximate evaluation is provided of the magnitude of the characteristic n which characterizes the relationship of the probability of meteoric ionization β to the speed of the meteoric body v ($\beta \sim v^n$). Results indicate that the probability of ionization is poorly dependent on the velocity of the meteoric body, and do not support the conclusions of a strong relation of β to v.

Jobsis, G. H.
THE ELECTRICAL DRIVE. Pt. 6 of The Radio-astronomical Observatory at Dwingeloo. [1961] 3p.
Order from ATS $4.75 ATS-85N54DU

Trans. of de Ingenieur (Netherlands) 1957 [v. 69] no. 3, p. 18-19.

DESCRIPTORS: *Radio astronomy, Radio equipment, Astronomical observatories, Netherlands.

Schigolev, B. M.
THE MATHEMATICAL PROCESSING OF OBSERVATIONS. CHAP. 3: ESTIMATING THE ERROR IN A FUNCTION WITH APPROXIMATE ARGUMENTS. 3 Oct 61 [21]p. MCL-1351/1+2. AD-265 732
Order from OTS or SLA $2.60 62-13002

Unedited rough draft trans. of mono. Matematicheskaya Obrabotka Nablyudenii, Moscow, 1960, p. 34-48.

DESCRIPTORS: *Astronomical data, Processing, *Functions, Errors, Numerical analysis, Trigonometry.

BEHAVIORAL SCIENCES
Psychology

Luriya, A. R.
THE MENTALLY RETARDED CHILD: OUTLINES OF STUDIES ON THE HIGHER NERVOUS ACTIVITY CHARACTERISTICS OF OLIGOPHRENIC CHILDREN. [1961] [177]p. JPRS: 10615.
Order from OTS or SLA $12.50 61-28853

Trans. of mono. Umstvenno Otstalyi Rebenok (Ocherki Izucheniya Osobennostei Vysshei Nervnoi Deyatel'nosti Detei-Oligofrenov) Moscow, 1960, 203p.

DESCRIPTORS: *Mental deficiency, *Abnormal psychology, *Children, *Brain, *Injuries, Nervous system, Diagnosis, *Electroencephalography, *Deafness, *Attention, *Speech, Stimulation, Cerebral cortex, Hearing, Intelligibility, *Behavior, *Conditioned reflex, *Learning, Reaction time, *Verbal behavior, *Education.

Recent Soviet data are presented that were obtained in investigations on the clinical characteristics and higher nervous activity features of mentally retarded children (chiefly oligophrenic children) taught in auxiliary schools. Mental retardation is considered as a pathological defect resulting from brain damage during the intrauterine development or earliest childhood. These pathological changes in the brain lead to gross disturbances of the entire subsequent mental development and are expressed distinctly in the electrical activity of the brain, the characteristics of the simplest reflexes, and in the higher nervous activity. They cause a disturbance in the ability to analyze and synthesize signals from the outside world and to form new associations: they lead to an essential change in the role which is played by speech in the analysis of the outside world and in the regulation of behavior.

Vurpillot, Éliane and Brault, Henriette.
EXPERIMENTAL STUDY CONCERNING THE FORMATION OF EMPIRICAL SCHEMATA (Étude Expérimentale sur la Formation des Schèmes Empirique). [1961] [24]p. 4 refs.
Order from SLA $2.60 61-20439

Trans. of l'Année Psychologique (France) 1959, v. 59, p. 381-394.

DESCRIPTORS: Psychology, Genetics, *Attitudes, Reaction (Psychology), *Age, *Perception, *Tests, Children, Photographs.

Various familiar, solid objects: houses, dolls, cups, were presented on a rotating plateau. After seeing the object from every angle, the child chose from amongst 8 photographs, the one most like the model. The photos of a same object could thus be classified in function of subjects' choices. The experiment was carried out on 320 children, boys and girls of 5, 6, 7 and 9 years of age (80 per age). The choices were not made at random and certain aspects were definitely preferred to others. Certain elements (the cup handle, the doll's face, the windows in the house) were fundamental choice criteria. The orientation can play a part. The older the child, the greater the importance he attaches to orientation. At 9 years old, a photo showing two sides of a house is distinctly preferred to that showing only one side. The genetic tendency seems to incline towards a quest for as much information as possible, even should the latter be thus rendered equivocal.

BIOLOGICAL SCIENCES

Oparin, A. I.
LIFE: ITS ORIGIN, NATURE AND DEVELOPMENT. [1961].
Order from OB 21s

Trans. of mono. Zhizn': Ee Priroda, Proiskhozhdenie i Razvitie, Moscow, 1960 [191]p.

DESCRIPTORS: *Biology, Growth

[illegible]suntseva, T. S.
NEW DATA ON AVIAN TUBERCULOSIS; ACCORDING TO DATA IN TRANSACTIONS OF VETERINARY UNIVERSITIES AND SCIENTIFIC RESEARCH ESTABLISHMENTS, AS WELL AS DISSERTATIONS FOR THE YEARS 1959 AND 1960 (REVIEW OF 12 ARTICLES) (Novye Dannye o Tuberkuleze ptits. po Materialam Trudov Veterinarnykh Vuzov i Nauchno-Issledovatel'skikh Uchrezhdenii, a Takzhe Dissertatsii za 1959 i 1960 gg). 24 Aug 61, 19p. Trans. Y-1725.
Order from OTS or SLA $1.60 61-28445

Trans. of Veterinariya (USSR) 1961, v. 38, no. 6, p. 48-52.

DESCRIPTORS: *Tuberculosis, *Birds, *Veterinary medicine, *Diagnosis, Tuberculin, Tuberculosis vaccine, Scientific research.

Anatomy and Physiology

Amelung, D.
REVIEW OF THE CHEMISTRY, MODE OF ACTION AND ANALYSIS OF INSULIN. [1961] 13p. 35 refs.
Order from SLA $1.60 61-20634

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1958, v. 83, no. 45, p. 2002-2005.

DESCRIPTORS: *Insulin, Glucose, Metabolism, Hormones, Biochemistry, *Liver, *Tissues (Biology), Carbohydrates, *Chromatographic analysis, *Endocrine glands, Secretion.

Astrand, P. O.
PHYSIOLOGICAL VIEWPOINTS ON WORKING POSITIONS AND WORK KINETICS. Lecture from discussion meeting of the [Swedish] Iron Works Association, 20 May 56. [1960] [15]p.
Order from SLA $1.60 61-18400

Trans. of [Jernkontoret, Stockholm. Annaler (Sweden) 1955, v. 139, no. 10, p. 817-828].
Another trans. is available from BISI £3 10s as BISI-954 [1960].

DESCRIPTORS: *Industrial psychology, *Human engineering, *Physiology, *Posture, Energy, Labor.

The human locomotive organs too often have to adapt themselves to the machine instead of machines being adapted to the human organs.

Clement, G.
THE MOBILIZATION OF RESERVE GLYCERIDES IN RATS. II. INFLUENCE OF THE SYMPATHETIC NERVOUS SYSTEM: ESTABLISHMENT OF A PROCESS FOR MEASURING THE INTENSITY OF THE MOBILIZATION. [1961] 18p. (5 tables omitted) 7 refs.
Order from SLA $1.60 61-20731

Trans. of Arch[ives] des Sci[ences] Physiol[ogiques] (France) 1950, v. 4 [no. 1] p. 13-29.

DESCRIPTORS: *Fat, *Fatty acids, Metabolism, Nerves, *Autonomic nervous system, *Nutrition, *Testes, *Kidneys, *Glycerols, Surgery, Quantitative analysis, Tissues (Biology).

(See also 61-20442)

Kobozev, G. V.
A MECHANICAL COULOMB METER FOR USE IN PROTEIN ELECTROPHORESIS (Zastosuvannya Mekhanichnogo Kulonometra do Elektroforezu Bilkiv) tr. by H. M. Warfield. 18 May 61 [10]p. 11 refs. [NIH] no. 5-19-61.
Order from OTS or SLA $1.10 61-23210

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1957, v. 29, no. 3, p. 375-382.

DESCRIPTORS: Measurement, *Proteins, *Electrophoresis, Electrometers.

A mechanical coulomb meter is described that can be employed for measuring the amounts of electricity required to perform an electrophoretic analysis. A mathematical formula is given for the computation of protein mobility values, to be used in conjunction with the coulomb meter.

Liu, Shih-i.
THE CEREBRUM, MAN, AND AUTOMATIC CONTROL. 19 Sep 61 [19]p. 9 refs. JPRS: 8888.
Order from OTS or SLA $1.60 61-28517

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1961, no. 3, p. 28-36.

DESCRIPTORS: *Brain, *Autonomic nervous system, Physiology, *Computors, *Diagnosis, Medical equipment, Man.

Mascitelli-Coriandoli, E.
RESERPINE IN EXPERIMENTAL THYREOTOXICOSIS: ITS ACTION ON THE ADENOSINE NUCLEOTIDES OF THE CARDIAC TISSUES (Das Reserpin bei Experimenteller Thyreotoxikose: Seine Wirkung auf die Adenosinnucleotide des Herzgewebes). [1961] 4p. 9 refs.
Order from SLA $1.10 61-20192

Trans. of Experientia (Switzerland) 1960, v. 16, p. 546-547.

DESCRIPTORS: *Reserpine, *Hyperthyroidism, *Nucleotides, *Cardiac muscle, Toxicity, *Adenosine phospates, *Thyroid gland, Thyroid extract, Thyroid hormones, Metabolism.

The addition of reserpine to a diet, containing thyroid extract, produces in rats an aggravation of the thyreotoxic symptoms characterized by increased mortality, greater inhibition of body development and further reduction of the cardiac concentrations of ATP, ADP and AMP. It is thought that this effect is due to a potentiation by reserpine of the action of the thyroid on the metabolism of the cardiac tissue. (Author)

Mironova, N. S.
RHINOPNEUMOMETER (Rinopnevmometr). 7 Sep 61 [8]p. 16 refs. JPRS: 10065.
Order from OTS or SLA $1.10 61-28588

Trans. of Meditsinakaya Promyshlennost' SSSR, 1961, v. 15, no. 3, p. 51-53.

DESCRIPTORS: *Instrumentation, *Respiration, Measurement, Medical equipment, *Air.

We set ourselves the task of finding a simple, objective method of determining the degree of penetrability of the nasal passages and of creating an instrument for the execution of the method. For this purpose it was decided to use the forcing of air through the nose and its withdrawal at a constant rate. The penetrability of the half of the nose being examined is determined by the difference between the pressure in front of an olive introduced into the nasal aperture and the pressure in front of it before it is introduced into the nose. (Extract)

Rey, Louis R.
PHYSIOLOGY OF CHICK EMBRYO HEARTS IN VITRO AFTER FREEZING AT VERY LOW TEMPERATURE. [1961] 7p. (3 figs. refs. omitted).
Order from SLA $1.10 61-20662

Trans. of Journal of Embryology and Experimental Morphology (Gt. Brit.) 1958, v. 6, no. 1, p. 171-177.

DESCRIPTORS: *Embryos, Physiology, Glycerols, *Freezing, Body temperature. Chickens.

Rijlant, Pierre.
NORMAL CONTRACTION AND AURICULAR AND VENTRICULAR FIBRILLATIONS IN THE TORTOISE, I. [1961] 3p.
Order from SLA $1.10 61-20243

Partial trans. (conclusions,) p. 108-112) of Cardiologia (Switzerland) 1946, v. 10, no. 1/2, p. 84-112.

DESCRIPTORS: *Turtles, *Heart, Physiology, *Cardiac muscle, Cardiographs, *Vagus nerve, Circulatory system, *Stimulation, Autonomic nervous system, Electrocardiography, Electric currents.

(See also 61-20241)

Rijlant, Pierre.
NORMAL CONTRACTION AND AURICULAR AND VENTRICULAR FIBRILLATIONS IN THE TORTOISE, II (CONCLUSIONS). [1961] [7]p.
Order from SLA $1.10 61-20241

Trans. of Cardiologia (Switzerland) 1946, v. 10 [no. 3] p. 130-138.

DESCRIPTORS: *Turtles, *Heart, Physiology, *Cardiac muscle, Cardiographs, Electrocardiography, *Stimulation, Electric currents, Circulatory system, Autonomic nervous system, *Vagus nerve.

(See also 61-20243)

Rijlant, Pierre.
NORMAL CONTRACTION AND AURICULAR AND VENTRICULAR FIBRILLATIONS IN THE TORTOISE, III. [1961] 4p.
Order from SLA $1.10 61-20242

Partial trans. (conclusions and summary, p. 221-224) of Cardiologia (Switzerland) 1946, v. 10, no. 4, p. 193-230.

DESCRIPTORS: *Turtles, *Heart, *Vagris nerve, Cardiac muscle, Physiology, Circulatory system, Cardiographs, Electro cardiography, Stimulation, Electric current, Autonomic nervous system, Pathology.

See also 61-20241

Sidorov, V. E.
PARENTERAL INJECTION OF FOREIGN SUBSTANCES INTO THE HAEMOCOELE OF THE TICK (Parenteral'nyi Metod Vvedeniya Postoronnikh Veshchestv v Gemotsel' Kleshcha) tr. by M. Slade. [1961] [6]p. (foreign text included). [CSIRO] Trans. no. 5391.
Order from OTS or SLA $1.10 61-28651

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, p. 768-769.

DESCRIPTORS: *Pathology, *Ticks, *Physiology, *Antigens.

Prior to the operation, posterior end of a tick is soldered in paraffine block by means of a hot spatula-spatule. Injection is carried out with the use of syringe held in a holder. An elastic hose ended in a drawn off glass capillar is put on a cut thick needle. The glass capillar is introduced into the cavity of the anterior tick limb amputated below the femur-tibia articulation. The stump is clamped with hot pincers. (Author)

Weinges, K. F.
THE INFLUENCE OF GLUCAGON AND INSULIN ON THE METABOLSIM OF THE UNESTERIFIED FATTY ACIDS OF ISOLATED ADIPOSE TISSUE OF RATS IN VITRO. [1961] 14p. (2 figs. 6 tables 40 refs. omitted)
Order from SLA $1.60 61-20581

Trans. of Klin[ische] W[ochen]schr[ift] (Germany) 1961, v. 39, no. 6, p. 293-298.

DESCRIPTORS: *Fatty acids, *Insulin, Glucagon, Metabolism, Body fat, Tissues (Biology), Harmones, Glucose, Biochemistry, Physiology, Endocrine glands, Secretion

The present investigations suggest that glucagon, in the intact organism has a direct effect on the adipose tissue. Its physiological importance in metabolsim phenomena appears to reside in a liberation of glucose and UFA from the two energy stores, liver and fat organ, for the periphery. The results of the present investigations give clues to the effect of glycagon on the glucose absorption of the adipose tissue being probably secondary, following a primary effect on the fat metabolism. (Author) (See also 61-20582)

Weinges, K. F. and Wörner, H.
ON THE INFLUENCE OF INSULIN AND GLUCAGON ON THE GLUCOSE METABOLISM OF THE EPIDIDYMALIC FAT APPENDIX OF RATS IN VITRO. I. THE INFLUENCE OF INSULIN, AND THE CONSEQUENT POSSIBILITY OF DETERMINING INSULIN-LIKE ACTIVITY IN HUMAN BLOOD. [1961] 13p. (3 figs. 2 tables refs. omitted)
Order from SLA $1.60 61-20582

Trans. of Klin[ische] W[ochen]schr[ift] (Germany) 1961, v. 39, no. 5, p. 238-243.

DESCRIPTORS: *Fatty acids, *Insulin, *Glucagon, *Metabolism, Body fat, Tissues (Biology), *Hormones, *Glucose, Biochemistry, Physiology, Measurement, Glycogen, Synethesis, Blood chemistry, Endocrine glands, Secretion.
A comparison was made of the two methods for insulin determination, with isolated epididymalic fat appendix, through measurement of the $C^{14}O_2$ formation from D-glucose-1-C^{14} and the glucose assimilation. It was not possible to find any substantial difference in the accuracy of the two methods. (Author) (See also 61-20581)

Biochemistry

Biegler, R., Böhle, E. and others.
A COLUMN-CHROMATOGRAPHY METHOD FOR DISPLAYING THE UNESTERIFIED FATTY ACIDS OF THE BLOOD. [1961] 7p. (5 tables omitted) 17 refs.
Order from SLA $1.10 61-20568

Trans. of Klin[ische] W[ochen]schr[ift] (Germany) 1960, v. 38, no. 11, p. 532-535.

DESCRIPTORS: *Chromatographic analysis, *Fatty acids, Lipids, Quantitative analysis, Ion exchange, Chemical analysis metabolism, Blood chemistry.

Castañeda, Maximiliano Ruiz, Soto, Rafael and others.
THE DISSOCIATION REACTION OF DYES IN COMBINATION AS APPLIED TO THE INVESTIGATION OF PROTEINS OF BIOLOGICAL LIQUIDS. [1961] 12p. (8 Eng. refs omitted) 1 ref.
Order from SLA $1.60 61-20055

Trans. of an unidentified Spanish language article from an unknown source, n.p., n.d.

DESCRIPTORS: *Proteins, *Dyes, Biochemistry, *Blood plasma, *Urine, *Blood, Tests, *Cerebrospinal fluid, Pediatrics, Dissociation, Body fluids.

A new method is presented for the qualitative determination of proteins in biological liquids. The principle is that the proteins tend to dissociate the components of a mixed dye: one of the dyes then will accompany the protein on the filter paper as it diffuses there. The method was employed for the determination of proteins in urines and the cephalorachidian liquid; in the urine tests the results agreed with the ones obtained in the comparison test with heat and acetic acid in 93% of the cases. The method shows a lower sensitivity limit of 410 mg/l. (Author)

Lacassagne, A., Buu-Hoi, N. P., and others.
SMALL REDUCTION IN THE CARCINOGENIC POWER ON HYDROGENATION OF HYDROCARBON MOLECULES, LARGE REDUCTION IN THE CASE OF THE BENZACRIDINES. [1961] 5p. 12 refs.
Order from SLA $1.10 61-20019

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1960, v. 251, no. 14, p. 1322-1324 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Biochemistry, *Hydrocarbons, *Hydrogenation, Polycylic compounds, *Benzene derivatives, *Cancer research, Nitrogen compounds, Chemical analysis, *Acridines.

Leon, N.
ORGANIC METABOLISM UNDER THE ACTION OF A TESTOSTERONE DERIVATIVE (Metabolismo Orgânico sob a Acão de um Derivado da Testosterona). [1961] 1p.
Order from SLA $1.10 61-20775

Trans. of Annaes Paul[istas de] Méd[icina e] Cirurgia (Brazil) 1961, v. 81, Mar, p. 146-148.

DESCRIPTORS: *Metabolism, Drugs, *Testosterone, Pituitary hormones, Growth.

Patients were submitted to excretion studies of urinary creatinine to evaluate the metabolic effect of methandrostenolone (17, 309-Ba) through calculation of the "lean body mass" according to the formulas of Miller and Blyth and Behnke et al. Methandrostenolone showed important trophic effects even in usually resistant cases such as anorexia nervosa and multideficiency syndrome. (Extracted)

Lynen, F. and Tada, Mariko.
THE BIOCHEMICAL FUNDAMENTALS OF THE "POLYACETATE RULE". [1961] 20p. (1 formula 2 diagrs. 11 equations 4 schemes 5 figs. omitted) 59 refs.
Order from SLA $1.60 61-20583

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 15, p. 513-519.

DESCRIPTORS: *Biochemistry, *Acetates, Atomic structure, Synthesis, *Fatty acids, *Polymers, Hydrocarbons, Biosynthesis, Solicylic acids, *Enzymes, *Yeasts, Acetic acids.

Schrade, W., Böhle, E., and others.
CONTRIBUTIONS TO THE REGULATION OF THE UNESTERIFIED FATTY ACIDS. Rept. 2 on Gas Chromatographic Investigations of the Serum Fatty Acids of Humans. [1961] 23p. (4 figs. 4 tables omitted) 23 refs.
Order from SLA $2.60 61-20564

Trans. of Klin[ische] W[ochen]schr[ift] (Germany) 1960, v. 38, no. 14, p. 707-716.

DESCRIPTORS: *Fatty acids, *Metabolism, *Chromatographic analysis, *Diabetes, Insulin, Oleic acids, Lipids, Hunger.

Botany

Bilyk, G. I. and Zerova, M. Ya.
CONCERNING SOVIET BOTANY AND MYCOLOGY; SCIENTIFIC ACTIVITIES OF THE INSTITUTE OF BOTANY, ACADEMY OF SCIENCES UKSSR IN 1960 [AND] CONGRESS OF EUROPEAN MYCOLOGIST (NO. 2). 20 Sep 61 [18]p. JPRS: 10172.
Order from OTS or SLA $1.60 61-28417

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1961, v. 18, no. 2, p. 99-106.

DESCRIPTORS: *Plants, *Fungi, Documentation.

Julen, Gösta.
ON THE EFFECT OF X-RAYING ON POA PRATENSIS (Über die Effekte der Röntgenbestrahlung bei Poa Pratensis). [1961] [12]p. (5 illus. omitted).
Order from SLA $1.60 61-20506

Trans. of der Züchter (Germany) 1958, v. 28, p. 37-40.

DESCRIPTORS: *Grasses, X-rays, *Radiation effects, *Mutations, Biology, Genetics, Reproduction, *Seeds.

Litvinenko, L. G.
THE EFFECT OF ORGANIC SUBSTANCES ON PHOTOSYNTHESIS AND RESPIRATION IN SOME BLACK SEA ALGAE (Vplyv Organichnykh Rechnovyn na Fotosyntez i Dykhannya Deyakykh Chernomors'kykh Vodorostei). Oct 61 [12]p. 23 refs. RTS 1954.
Order from OTS or SLA $1.60 61-28673

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1960, v. 17, no. 1, p. 12-18.

DESCRIPTORS: *Photosynthesis, *Respiration, *Algae, Black Sea, Organic compounds.

Algal respiration increased in solutions with small concs. of organic substances (0.2% glucose; 0.5, 0.2, 0.1% saccharose; 0.5% sodium acetate; 0.02% glycocoll) and was depressed in the presence of relatively high concs. of organic compounds (3, 0.5% glucose; 1% sodium acetate). Algal photosynthesis was usually inhibited in solutions at the concs. of organic substances tested. The only exception was 0.02% glycocoll, in the presence of which the rate of photosynthesis was found to increase slightly. Relatively high concs of organic substances were pronouncedly inhibitory to the rate of photosynthesis, whereas in small concs. they slightly depressed the rate of this process. On this basis it can therefore be assumed that organic substances at lower concs. than those we selected, will increase algal photosynthesis. (Author)

Müller, H. W. and Schilowa, I.
FERTILIZATION RESULTS AFTER ARTIFICIAL POLLINATION IN RELATION TO THE AGE OF THE SILKS AND STORAGE OF POLLEN AT DIFFERENT TEMPERATURES AND HUMIDITIES [PT. 2] (II. Befruchtungsergebniss nach Künstlicher Bestäubung in Abhängkeit vom Narbenalter und der Pollen Lagerung bei Verschiedener Temperatur und Luftfeuchtigkeit). [17]p. 24 refs.
Order from SLA $1.60 61-20427

Trans. of der Züchter (Germany) 1959, v. 29, no. 4, p. 187-191.

DESCRIPTORS: *Pollen, *Plants, *Fertility, *Corn, Agriculture, Temperature, Storage, Growth, *Humidity, Age.

Results of the experiments carried out in the years 1956-1958, show that the capability of functioning of the female fruitifications of maize, under the climatic conditions of Central Germany, is maintained longer than is known from the descriptions of the most important maize cultivation areas. The accomplishment of crosses between types in different maturity groups is made considerably easier by this. This proves to be true, especailly for the crossing of early strains as females and relatively late strains as males. Maize pollen can be stored only up to 48 hours in moist chambers under normal temperature conditions. After 24 hours, storage in temperatures around 20°C and in dry atmosphere, the fecundation capability is severely reduced. The viability of pollen can be lengthened to 120 hr when it is stored at 2°C. (Author)

Papikyan, N. A.
PECULIARITIES OF THE WATER REGIME OF SOME TREE AND SHRUB SPECIES IN THE IRRIGATED SEMI-DESERT (Osobennosti Vodnogo Rezhima Nekotorykh Drevesnykh i Kustarnikovykh Porod v Usloviyakh Oroshaemoi Polupustyni) tr. by M. Slade. [1961] [23]p. (foreign text included) 32 refs. [CSIRO] Trans. no. 5263.
Order from OTS or SLA $2.60 61-28639

Trans. of Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. Biol[ogicheskie] i Sel'[skokhozyaistvennye] Nauki, 1957, v. 10, no. 5, p. 41-56.

DESCRIPTORS: *Plants, *Metabolism, Water privation, *Trees, Sail, *Irrigation systems, Agriculture.

The water regime of some tree and shrub species in the region of the irrigated rocky foothill semi-desert of Armenia (the Erevan Botanic Gardens of the Academy of Sciences of Armenia) was studied during the growing season 1952-1954. On the basis of the characteristic water regimes the plants can be grouped as follows with respect to their drought resistance: (1) highest drought resistance--Scumpia, Caucasian

hawthorn, common privet, Van-Gutt's Spiraea, Hippophaë, Oleaster, Acacia, Gleditzia triacanthos, "elongated" juniper, Virginian juniper, and Thuya-orientalis; (2) lower drought resistance--Shishkin's poplar, walnut, maple, common ash, lilac, Magaleb cherry, Koch's pine; and (3) no drought resistance--Pyramid poplar, elm, Tilia, Platanus palmatus, willow and Transcaucasian poplar.

Parmasto, E. Kh.
DEVELOPMENT OF FRUITING BODIES AND SPORULATION IN POLYPORUS FUNGI (Razvitie Plodovykh Tel i Sporulyatsiya Trutovykh Gribov). 1961, 16p. 30 refs. PL-480 Agr.
Order from OTS $0.50 60-21905

Trans. of Akademiya Nauk Estonskoi SSR [Tallinn]. Izvestiya: [Seriya Biologicheskaya] 1958, [v. 7] no. 2, p. 83-93.

DESCRIPTORS: *Fungi, Reproduction, *Growth, Moisture, *Spores, Classification, Air, Trees.

Stationary observations based on the Bjornekaer (1938) method, and carried out in the Ryapinaskii District during 1953-1955, showed that the 56 species (220 specimens) examined belong to polyporacae with annual fruiting bodies, with annual wintering fruiting bodies, or with perennial fruiting bodies. Those with annual fruiting bodies are mainly represented by the subfamilies Porioideae, Tyromycetoideae, and Polyporoideae. In most of these species the fruiting bodies appear in July or August and assume almost normal dimensions in 1 or 2 (exceptionally even 4) weeks. To the group with annual wintering fruiting bodies belong many species of Corioloideae and some species of the subfamilies Tyromycetoideae and Porioideae. The fruiting bodies appear between June and September and develop slowly. Sporulation begins a month or more later and usually continues till the average daily temperature falls below 2°C. Some of the fruiting bodies survive the winter and resume sporulation in the spring after the temperature rises above 2°C. Most polyporaceae with perennial fruiting bodies belong to the subfamily Fomitoideae. New fruiting bodies appear between June and September, while the hymenophore layers of the old fruiting bodies continue to grow slowly. There is a period of sporulation during the summer and autumn, and another in the following spring.

Vasil'ev, V. N.
THE BAIKAL-SAYAN REGION AS ONE OF THE MAIN RECENT CENTERS OF FORMATION OF THE GENUS BETULA L. (Baikalo-Sayanskaya Oblast' kak Odin iz Glavneishikh Pozdnikh Tsentrov Formirovaniya Roda Betula L.). 1961, 24p. 10 refs. PL-480 Agr.
Order from OTS $0.50 60-51021

Trans. of Akademiya Nauk SSSR. Institut Lesa. Trudy, 1958, v. 37, p. 120-141.

DESCRIPTORS: *Trees, Growth, *Classification, Genetics, Ecology, Asia.

This survey of birches occurring in the Baikal-Sayan region shows that almost all the large genetic series found in the Soviet Union, with the exception of the group of Central Asiatic species (Series Turkestanicae) are represented within the region's boundaries. (Author)

Veretennikov, A. V.
DEATH AND REGENERATION OF THE ROOT SYSTEM OF PINUS SYLVESTRIS L. IN RELATION TO CONDITIONS OF OXYGEN SUPPLY IN THE ROOT ZONE (Otmiranie i Regeneratsiya Kornevoi Sistemy Pinus Sylvestris L. v Zavisimosti ot Uslovii Snabzheniya Korneobitaemogo Sloya Pochvy Kislorodom Vozdukha). 1961, 10p. 13 refs. PL-480 Agr.
Order from OTS $0.50 60-51022

Trans. of Botanicheskii Zhurnal (USSR) 1959, v. 44, no. 2, p. 202-209.

DESCRIPTORS: *Pine, *Regeneration, Forestry, *Oxygen consumption, Soils, *Water supplies, Tissues (Biology), *Trees, Plants.

Temporary waterlogging of the soil, which is characteristic of the pine-whortleberry forest in spring and fall, is accompanied by a deficiency in oxygen in the root zone of the soil. Anaerobic conditions in the soil lead to a mass suffocation of pine roots. The loss of actively absorbing parts of the root system affect the growth of the tree negatively. A considerable elasticity was discovered in the root system of 50 to 55-year-old pine, evident in an ability to regenerate partly damaged roots rapidly and abundantly. The primordia of adventitious roots develop in the center of meristematic tissues which, in their turn, evolve from the cambium of the mother root. The adventitious roots of pine possess a high growth energy and partly restore the actively absorbing part of the root system. The survival of pine in temporarily waterlogged areas is due, not to a resistance displayed by its roots to anaerobic conditions in the soil, but to this feature of regeneration, combined with the ability of the root system to exploit intensively the elevated parts of the soil microrelief. Adventitious pine roots, in contrast to normal lateral roots, have an increased number of protoxylem groups and a characteristically abundant parenchyma in the central part of the root.

Zhebrak, A. R.
THE INFLUENCE OF GRAFTING ON SEED PROGENY AND ON THE SEGREGATION OF HYBRIDS IN THE SECOND GENERATION (Vliyanie Privivki na Semennoe Potomstvo i na Rasshcheplenie Gibridov Vtorom Pokolenii). 1961, 4p. 4 refs. PL-480 Agr.
Order from OTS $0.50 60-51030

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 107, no. 2, p. 325-327.

DESCRIPTORS: Reproduction, *Seeds, *Genetics, Nuclei (Biology), Tissues (Biology), Pollen

A thorough study was made of the seed generation from graft combinations of pure strains of pea, and of their hybrids. The grafting of constant (homozygous) lines had no influence whatsoever on hereditary characters; The degree of dominance or of recessiveness in the first and second generation was not altered under the influence of grafting of strains with dominant characters. This applies to the grafting of

strains with dominant characters on those with recessive characters, and vice versa. The correlation between dominant and recessive forms during segregation of hybrids in the second generation remained unchanged under the influence of grafting on respective allelomorphs. The segregation of hybrids showed no deviations as a consequence of alteration of nuclear structure during meiosis under the influence of grafting.

General Biology

Evakhova, V. F.
STRUCTURE-FORMING MIGRATION OF REGENERATIVE MATERIAL IN THE HYDRA, tr. by Zelda D. Knowles. 12 Sep 51, 8p. (3 figs. omitted) 6 refs.
Order from OTS or SLA $1.10 61-28013

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1946, v. 53, no. 4, p. 373-376.

DESCRIPTORS: Biology, *Regeneration, *Radiation effects, X-rays, Tissues (Biology), Cells (Biology), Mitosis, *Radiobiology.

Tests showed that a dose of 5,000 roentgens completely suppresses the regenerative capacity in pelmatohydra oligactis on the ninth day after exposure. The sensitivity of P. oligactis to the effect of the roentgen rays depends on the time of year. In the fall of the year hydras are more resistant. The lack of regeneration of the oral section, for the P. oligactis exposed to 5,000 g, on the ninth day after exposure is explained by the disappearance of i-cells. Regeneration of the oral section of the body on the exposed portion of the P. oligactis at its being grafted to an unexposed portion proceeds at the expense of the i-cells which migrate from the unexposed portion to the exposed.

Rouiller, Charles.
BILE CANALICULI, AN ELECTRON MICROSCOPE STUDY (Les Canalicules Biliaires; Étude au Microscope Électronique). [1961] [16]p. (7 figs. omitted) 55 refs.
Order from SLA $1.60 61-20002

Trans. of Acta Anatomica (Switzerland) 1956, v. 26, p. 94-109.

DESCRIPTORS: *Liver, *Cells (Biology), *Tissues (Biology) *Electron microscopy.

The study of bile canaliculi in the rat with the electron microscope has revealed the following. Bile canaliculi do not have a wall of their own, but are delineated by the cell membranes of the adjacent hepatic cell. They have villi formed by protuberances of the hepatic cell membrane and cytoplasm. They are never intracellular but have always close topographical relations with a number of organoids and cytoplasmic inclusion, particularly with the Golgi apparatus. The space of Disse is in direct communication on the one hand with the bile canaliculi and the other with the sinusoid. There is thus direct communication between the blood and the bile systems. (Author)

Microbiology

Hellmann, H. and Lingens, F.
ELUCIDATION OF BIOLOGICAL SYNTHETIC CHAINS BY MEANS OF MICROORGANISMS. [1961] 27p. 118 refs.
Order from SLA $2.60 61-18687

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 3, p. 107-113.

DESCRIPTORS: *Mutations, Genetics, Biochemical genetics, *Enzymes, Synthesis, *Microorganisms.

Microorganisms offer especially suitable conditions for the elucidation of biochemical synthetic chains. They can be cultured quickly, require little space, are easily available in numerous species, and can often carry out synthesis of which higher living organisms are not capable. But above all, they can be transformed by simple methods into mutants which make possible a simple analysis of the products of metabolism in various ways. (Author)

Kravchenko, A. T. and Saltykov, R. A.
PROPHYLAXIS OF INFECTION WITH LIVE VACCINES: BOOK REVIEW. 17 Aug 61, 19p. Trans. V-1722.
Order from OTS or SLA $1.60 61-28442

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1961 [v. 32] no. 6, p. 147-151 (Review of the book Profilaktika Infektsii Zhyvymi Vaktsinami, ed. by M. I. Sokolov, M[oscow] 1960, 355p.).

DESCRIPTORS: *Public health, *Bacterial vaccines, *Immunology.

Neurology and Psychiatry

PROBLEMS OF PSYCHIATRY AND NEUROPATHOLOGY, VOL. 1 (Voprosy Psikhiatrii i Nevropatologii) tr. by Jan Styr. [Dec 61] 375p. 283 refs. PL-480 HEW.
Order from OTS $3.75 60-21173

Trans. of Leningradskoe Nauchnoe Obshchestvo Nevropatologov i Psikhiatrov. Sbornik Trudov (USSR) 1958, v. 3.

DESCRIPTORS: *Psychiatry, *Neurology, *Pathology, *Psychoses, *Infections, *Brucellosis, *Encephalitis virus, *Mental diseases, *Head injuries, Equine encephalomylitis, Meningitis, *Asthma, Poliomyelitis, *Neoplasms, *Brain tumors, Hepatolenticular degeneration, *Leukemia, *Acoustic nerve, *Aorta, Blood vessels, *Venereal diseases, *Epilepsy, *Electroencephalography, Freezing.
Contents:
The clinical aspects of psychoses due to chronic infectious diseases, by A. Z. Rozenberg
The pathogenesis and clinical symptoms of psychosis due to brucellosis, by L. A. Lipskaya
Mental disorders in the course of encephalitis due to common cold, by L. N. Lezhepekova

Mental disorders in brain cysticercosis, by S. S. Kaliner
Peculiarities of the development and course of brain concussion, by M. B. Nudel'
Wernicke polioencephalitis, by V. V. Semenova-Tyan-Shanskaya
Vilyui encephalomyelitis, by A. N. Shapoval
Acute serous meningitis observed in autumn 1955 in Leningrad, by A. Yu. Makarov
Concerning mental disorders in bronchial asthma, by V. P. Parshina
The hepatocerebral syndrome in atrophic liver cirrhosis, by A. S. Iontov and A. Z. Rozenberg
Mental disorders in extracerebral tumors, by Z. P. Zubareva
Tumor of the right cerebral hemisphere with pernicious anemia syndrome, by N. A. Popov
Brain tumors with symptoms of vascular diseases, by R. M. Belen'kaya
The classification and symptomatology of acoustic neurinoma, by E. A. Terpugov
Morphological changes in the nervous system during rupture of a dissecting aneurysm of the aorta, by G. A. Akimov
The structure of the pupillary reflex in early neurosyphilis, by A. K. Popov
The clinical and neurological diagnosis of primary tumors in the lateral ventricles of the brain, by N. A. Popov and K. N. Chalisova
Hypothermia as a prophylactic measure in nervous system changes during acute circulatory disorders, by G. A. Akimov
Administration of drugs for the examination of sugar curves in diseases of the central nervous system, by E. P. Khmyznikova
Role of external stimuli in the origin of hallucinations, by G. B. Abramovich
Problems of expert medical evaluation of working capacity in neuroses, by A. S. Borzunova
The role of the carotid reflexogenic zone in the etiology of the epileptic seizure, by Z. I. Tyutryumova
Cutaneogalvanic reflexes in petit mal type of epilepsy in children, by V. N. Bondarev
Pneumoencephalographic observations in epilepsy due to closed trauma of the brain, by A. M. Korovin
The treatment of epilepsy, by S. P. Vorob'ev
Some data concerning objective examination of the functional state of the central nervous system and its value for diagnostic purposes and for the Medical Expert Commission, by M. D. Shpatserman
Neuromorphological changes in radiation lesions, by V. A. Makarova
Biocurrents of muscles in myotonia, by A. P. Zinchenko
Visceral and metabolic disorders in patients suffering from myasthenia, by V. S. Lobzin
Some peculiarities of the pathomorphology of lumbosacral radiculitis, by V. A. Eliseev
Nerve sutures during the initial surgical treatment of infected wounds, by R. Z. Zaitsev
Concerning the method of encephalography, by G. N. Esinovskaya
Clinical symptoms of basilar artery thrombosis, by E. P. Rodionova
Changes of the autonomic functions and some peculiarities of the higher nervous activity during active therapy in patients with schizophrenia, by E. S. Arutyunov
The problem of sleep therapy in the psychiatric clinic, by A. M. Lukina
Our experience with aminazine treatment, by A. L. Gurari and K. K. Poppe
The problems and tasks of Soviet child psychiatry, by S. S. Mnukhin
The etiology and pathogenesis of "focal" epilepsy, by L. E. Kashkarov
The pathophysiological basis of epilepsy, by I. E. Kashkarov
Old Russian views on harmfulness of hard drinking to health, by N. A. Bogoyavlenskii
The role of trauma in the development of tick-borne encephalitis, by Kh. L. Bel'man
Physiological analysis of hysteric pseudology, by N. A. Khromov
Neuropsychic disorders in general freezing, by V. P. Bogachenko and A. V. Kvasenko
Concerning the problem of kleptomania, by N. E. Isaevich
Nikolai Alexandrovich Popov; to celebrate the 35th year of his medical, scientific and pedagogical work
In memory of F. A. Naumov.

PROBLEMS OF PSYCHIATRY AND NEUROPATHOLOGY, VOL. 2. (Voprosy Psikhiatrii i Nevropatologii) tr. by Zvi Lothane and Jan Styr. [Dec 61] 276p. 169 refs. PL-480 HEW.
Order from OTS $3.00 60-21174

Trans. of Leningradskoe Nauchnoe Obshchestvo Nevropatologov i Psikhiatrov. Sbornik Trudov (USSR) 1958, v. 4.

DESCRIPTORS: *Psychiatry, *Neurology, *Pathology, Brain, Ataxia, *Tuberculosis, *Meningitis, Muscular atrophy, Autonomic nervous system, *Epilepsy, Injuries, *Poliomyelitis virus, *Psychoneuroses, Childbirth, *Therapy, *Shock therapy, Insulin, *Electroshock, Sleep, *Drugs, *Psychoses.
Contents:
Forty years of scientific work of the Leningrad neuropathologists, by I. Ya. Razdol'skii
Forty years of scientific work of the Leningrad psychiatrists, by I. F. Sluchevskii
The history of development of the Third Leningrad Psychoneurological Hospital, by K. K. Poppe
Mental diseases in Leningrad during World War II, by Z. S. Tylevich
History of hospital psychiatric aid in Leningrad, by S. A. Sokol'skaya and Z. S. Tylevich
Clinical symptoms and diagnosis of acute cerebellar ataxia, by S. N. Davidenkov and O. A. Pokrovskaya
Anatomicopathological changes in acute cerebellar ataxia, by S. N. Davidenkov and Sh. A. Khidrogluyan
The frontothalamic connections and their topography, by A. A. Vagina
Pathomorphological changes of the vasa nervorum in bullet injuries of the sciatic nerve, by K. F. Kanareikin
The similar and different clinical features of serous and tuberculous meningitis in children, by G. G. Makovskaya
Functional disorders of the thermoregulatory and perspiration functions in progressive muscular dystrophy and spinal amyotrophy in children, by A. I. Lupukal'n
Autonomic asymmetries in disturbances of cerebral circulation, by E. M. Mandel'shtam
Data of studies in traumatic epilepsy (parietal localization) by N. A. Popov
The clinical characteristics of late psychotic sequelae of closed cranial trauma, by L. I. Ushakova

The problem of the normal ranges of the consensual movement of the eyeball in healthy individuals, by N. I. Moiseeva
The clinical picture of poliomyelitis, by N. N. Keler
Hypochondriasis and hypochondriac psychoses as formulated by S. S. Korsakov, by S. I. Kogan
The problem of postpartum psychoses, by I. E. Averbukh
Studies of the effects of so-called "sore spots"on the motor-evacuatory function of the stomach in patients with paranoid schizophrenia and paraphrenia, by M. Ya. Briskman
The clinical picture and neurodynamics of the involutional psychosis as correlated with therapeutical procedures, by L. I. Zimukova
The metabolism of the easily-hydrolyzable phosphorus of adenosine triphosphoric acid and inorganic phosphorus in whole blood of patients suffering from certain mental diseases in the course of an insulin shock, by N. G. Efimovich
The effect of electroconvulsive therapy on the constituents of blood in patients suffering from schizophrenia, by I. I. Il'in and M. S. Dzyubenko
Summation of the inhibitory action of sugar and barbiturates orally administered in the course of sleep therapy, by N. S. Sedina and I. M. Tylevich
An attempt to apply diphazine in certain diseases of the nervous system, by N. N. Anosov
The use of dicumarol in thrombosis of cerebral vessels, by N. N. Anosov and others
Copper sulfate medication in states of excitation accompanying mental disease, by M. I. Botvinnikova
The effect of copper sulfate on hallucinatory disorders accompanying various mental diseases, by M. I. Botvinnikova
An attempt at treating patients suffering from chronic encephalitic psychosis with endolumbar injections of streptomycin, by A. Yu. Labok and F. I. Sluchevskii
Aminazine (chlorpromazine) treatment of psychic equivalents in epilepsy, by L. I. Kruglova
The treatment of epilepsy with hexamidine, by V. N. Kovalnako
Individual aspects of the problem of absence of responsibility, by I. K. Shakhrimanyan
K. I. Povarnin
A report on the work of the board of directors of the Leningrad branch of the All-Union Scientific Society of Neuropathologists and Psychiatrists from Dec 1954 to Jan 1958
A list of lectures read at the conferences of the society from Dec 1954 to Jan 1958.

Pathology

ACADEMY OF MEDICAL SCIENCES USSR, GENERAL SESSION (NO. 15) 1961. 29 Sep 61, 131p. JPRS: 10310.
Order from OTS $2.75 61-31632

Trans. of 13 selected articles from Meditsinskii Rabotnik (USSR) 1961, v. 24, nos. 42-44.

DESCRIPTORS: *Medical research, *Diseases, *Infections, *Heart, *Circulatory system, *Hypertension, Blood circulation, *Public health, *Tuberculosis, *Nutrition, Psychotherapy, *Brain, *Nervous system, *Pharmacology, Industrial medicine, Conferences.

Contents:
Some results and prospects for the development of Soviet medical science, by N. N. Blokhin
Most important trends of the investigations in the struggle against infectious diseases, by V. D. Timakov
Prophylaxis and treatment of cardiovascular diseases, by A. L. Myasnikov
Prevention of occupational diseases in the new branches of industry, by A. A. Letavet
Basic tasks in tuberculosis control, by N. A. Shmelev
Development of research in the field of the hygiene of nutrition, by O. P. Molchanova
General session of the Academy of Medical Sciences USSR (no. 15) [pt. 1]
General session of the Academy of Medical Sciences USSR (no. 15) completed its work
General meetings of the sections of the Academy of Medical Sciences USSR: important problems of theory
Contemporary psychopharmacology
Pathology of cerebral circulation
New additions to the Academy.

I. C. R. S. MEDICAL REPORTS, 1961, VOL. 3, NO. 3, July-Sep 61, 48p
Order from Institute of Contemporary Russian Studies, Fordham U., New York, 58, N. Y. $1.00, $10.00/year
foreign $12.00/year

Consists of English reviews of repts. on current research, selected news briefs, repts. on congresses and meetings, and other items, published chiefly in Soviet medical periodicals

DESCRIPTORS: *Medical research, Neoplasms, *Tumors.

Contents:
Six years of oncology research in the Soviet Union, 1955-60, by Max Brandt.

RHEUMATIC FEVER PROBLEMS, 1961, VOL. 1, NO. 1: SELECTED ARTICLES. 23 Aug 61, 78p. 198 refs. JPRS: 9991.
Order from OTS $2.00 61-31588

Trans. of Problemy Revmatizma (USSR) 1961, v. 1, no. 1, p. 3-10, 43-51, 57-66, 72-86.

DESCRIPTORS: *Rheumatic fever, Tissues (Biology) *Carbohydrates, Heart, *Cardiac muscle. *Arthritis, *Atabrine, Chloroquine, Pathology, *Blood plasma, Coagulation, *Enzymes, *Coagulases, Immunology, *Medical research, *Streptococcus infections, *Penicillin, *Potassium isomycomycin, Antigens, *Immunity, Proteinases, Fungi.

Contents:
Polysaccharides in the connective tissue of the heart in rheumatic fever, by A. I. Strukov and T. I. Suchkov
Antimalarial agents in the treatment of rheumatoid arthritis, by M. Vykydal and J. Lenfeld
Proteolytic and mycolytic enzymic processes in the pathogenesis and clinical aspects of rheumatic fever, by G. D. Zalesskii and V. P. Kaznacheev
Rheumatoid factor, by V. I. Sachkov and M. P. Grigor'eva

Some results and problems of further investigations in the field of the pathogenesis and immunology of rheumatic fever, by I. M. Lyampert and L. V. Beletskaya.

Bezdeneshnykh, I. and Gannushkin, M.
IMMUNIZATION (Immunizatsiya) tr. by C. D. 21 Aug 61, 24p. 8 refs. H-5490.
Order from OTS $0.75 61-31646

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1959, v. 11, cols. 227-257.

DESCRIPTORS: *Immunization, *Military medicine, Infections, *Military personnel, Animals.

Topics discussed include (1) immunization methods; (2) characteristics of preparations and appraisal of their quality; (3) contraindications to immunization; (4) immunization techniques; (5) immunization against specific infectious diseases; (6) immunization of troops; and (7) immunization of animals.

Castañeda, M[aximiliano] Ruiz and Alanis, Carmen.
DETERMINATION OF THE BLOOD TYPE BY SURFACE FIXATION. [1961] 8p. (1 fig. 1 table 2 refs. omitted) 2 refs.
Order from SLA $1.10 61-20054

Trans. of an unidentified Spanish language article from an unknown source, n.p., n.d.

DESCRIPTORS: *Blood transfusions, *Hemaglutinins, Test methods, Blood.

A possible application of the surface fixation method is presented, so that the A, B, and O types of blood used for transfusion can be determined rapidly and accurately. The velocity with which the reaction is run, and the resistence which the globules offer to the entrainment into the capillary flow show that the method which is much more sensitive than the agglutination test for revealing the agglutinating action of the anti-A and anti-B sera with the respective agglutinogens. The personal errors of reading the reaction are perhaps smaller, as each sample can be preserved and can be reread at a later date by a person of experience. The surface fixation test gives results identical with the ones obtained according to the agglutination method. The advantage is that doubtful readings are avoided, as all the results are clearly legible. (Author)

Ch'ien, Hsin-chung.
TUMOR RESEARCH WORK (PREVENTION) MUST ADVANCE ON THE BASIS OF TRIUMPHANT ACHIEVEMENTS. 10 Oct 61, 23p. JPRS: 10491.
Order from OTS $0.75 61-31654

Trans. of Chung Hua i Hsüeh Tsa Chih (Chinese People's Republic) 1960, v. 46, no. 1, p. 8-14.

DESCRIPTORS: *Neoplasms, China, Scientific research, Preventive medicine.

Gebala, A.
COLD AGGLUTININS IN CHILDHOOD VIRUS DISEASES (Die Kälteagglutinine bei Viruskrankheiten des Kindesalters) tr. by P. Hajdu. 20 Aug 59, 17p. 16 refs.
Order from OTS or SLA $1.60 59-18960

Trans. of Helvetica Paediatrica Acta (Switzerland) 1958, v. 13, no. 3, p. 262-271.

DESCRIPTORS: *Virus diseases, *Children, *Hemagglutinins

Childhood diseases of viral origin show a more frequent rise in cold agglutinin titers than do bacterial infections. There is a correlation between the incidence of positive cold agglutinin titers and the degree of inflammatory change in the respiratory tract. Virus-caused pneumonia appears not only as "primary atypical pneumonia" but also as a complication of measles, chickenpox, mumps, infectious hepatitis, German measles, influenza and poliomyelitis. Clinically and radiologically the changes in the lower respiratory tract are similar in the various diseases of virus origin. The pneumotropic characteristics of these viruses are particularly evident when the children are affected by pre-existing diseases. In determining the importance of cold agglutinin titers in childhood, the age of the patient must be taken into consideration: the younger the child, the lower the titer, and the lower the percentage of positive titers even in the more severe viral infections. (Author)

Gottron, H. A.
SARCOMA OF THE SKIN (Sarkom der Haut). [1961] [25]p. (32 figs. omitted) 59 refs.
Order from SLA $2.60 61-20188

Trans. of der Hautarzt (West Germany) 1953, v. 4, Feb, p. 49-56.

DESCRIPTORS: *Neoplasms, *Skin, Pathology, Diagnosis, Medical Examination, Tissues, Histology, Neoplasms

Grawitz, F. Busse.
THE IMPENDING REVOLUTION IN INFLAMMATION THEORY. [1961] 10p. (refs. 2 figs. omitted).
Order from SLA $1.10 61-20575

Trans. of Med[izinische] Klin[ik] (Germany) 1960, v. 55, no. 48, p. 2141-2145.

DESCRIPTORS: *Infections, *Leukocytes, Tissues (Biology), *Reticulo-endothetial system, Cells, (Biology), Histology, *Healing, Fibrinolysis, Pathology, Wounds, *Reticulocytosis

Marquardt, E. and Häfner, O.
TECHNICAL ADEQUACY AND PRACTICAL APPLICATION OF THE HEIDELBERG PNEUMATIC PROSTHESIS, tr. by E. Kunkel. [1960] 38p. 14 refs.
Order from International Society for the Welfare of Cripples, 701 First Ave., New York, 17, N. Y. $1.00

Trans. of Archiv für Orthopadische und Unfall-Chirurgie (West Germany) [1956] v. 48, p. 115ff.

DESCRIPTORS: *Prosthetics, Artificial limbs, Arms.

Oettel, H.
CARCINOGENIC SUBSTANCES, OCCUPATIONAL CANCER, AND MORTALITY BY CANCER. [1961] 17p 94 refs.
Order from SLA $1.60 61-20649

Trans. of Angewandte Chemie (West Germany) 1958, v. 70 [no. 17/18] p. 532-539.
Another trans. is available from SLA mi$2.70, ph$4.80 as 59-10720 [1958] 24p.

DESCRIPTORS: *Neoplasms, Chemicals, *Benzenes, *Hydrocarbons, Cancer research, *Industrial medicine.

For abstract see Technical Translations 1: 391, 1959.

Parnes, V. A.
THE IMMUNOLOGY OF LEUKOSIS: CHAPS. 1-5 (CONCLUSIONS). 9 Oct 61 [9]p. JPRS: 10447.
Order from OTS or SLA $1.10 61-28909

Trans. of mono. Immunologiya Leikoza, Moscow, 1960, p. 43-44, 95, 118-119, 192-194, 215-216.

DESCRIPTORS: *Leukemia, *Lymphocytes, *Immunology, *Antibodies, *Antigens, *Anaphylaxis, *Sensitization, Viruses, *Birds, *Animals, *Virus vaccines, *Etiology, Immunity, *Virus diseases.

Contents:
The immunology of transplantable leukosis (myeloleukosis, lympholeukosis and lymphosarcomatosis) in animals
A comparison of the anitgenic properties of leukosis: affected and normal tissue of man to anaphylasis reactions with desensitization
The problem of the endogenous origin of Leukemic antigens
Leukosis viruses of birds and animals, their antigenic properties, and their role in leukosis immunity
Specific precipitation reaction in agar as a method of differentiation of antigens in the antigenic complexes and the prospects of its use in the study of the immunology of leukosis.

Pharmacology and Toxicology

PHARMACOLOGY: SELECTED TRANSLATIONS. 22 June 61 [62]p. 34 refs. JPRS: 9447.
Order from OTS or SLA $6.60 61-23621

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsieh K'o Hsueh Ch'eng Chiu Lun Wen Chi (A Collection of Papers on the Medical Sciences in Commemoration of the Tenth Anniversary of the Founding of [the People's Republic of China] v. 1, Peiping, Dec 59, p. 597-616.

DESCRIPTORS: *Pharmacology, China, Synthesis, *Chloromycetin, *Streptomyces, Physiology, Biochemistry, *Terramycin, *Antibiotics, Production, Drugs, *Streptococcus infections,

Contents:
China's progress in the study of chloramphenicol synthesis, by Chen Chia-hsiang
Physiology of streptomyces aureofaciens, by Chang K'uan-hou
The physiology and biochemistry of streptomyces rimosus, by Liu Jo-ying and others
Experimental preparation of terramycin, by Wang Wen-hsiang and Fan Ch'eng-tien.

PROCESS FOR THE PRESERVATION OF COSMETIC PRODUCTS, tr. by Kurt Gingold. 17 July 61, 3p.
Order from OTS or SLA $1.10 61-18683

Trans. of French patent 992, 360, by Societé Anon. Procedes Agricoles Modernes, filed 21 June 44, issued 11 July 51, pub. 17 Oct 51.

DESCRIPTORS: *Protective ointments, Preservation, Processing, France.

The process is characterized by the addition to cosmetic products, as an antiseptic, microbicide, bactericide, or fungicide, of ethylene oxide, propylene oxide, or butylene oxide, generally in the proportion of 2 to 5 parts per 1000, by weight.

Bailenger, J.
EXPERIMENTAL STUDY OF A NEW ANTIAMEBIC AGENT: 4, 7-PHENANTHROLINE 5, 6-QUINONE (Contribution a l'Étude Experimentale d'un Nouvel Anti-amibien: la 4, 7-Phenanthroline 5, 6-Quinone). July 61, 1p.
Order from SLA $1.10 61-20182

Trans. of la Presse Med[icale] (France) 1961, v. 69, 13 May, p. 1044.

DESCRIPTORS: *Amoebic dysentery, *Pharmacology, *Quinones, Countermeasures

4, 7-phenanthroline 5, 6-quinone (11, 925 C or Entobex CIBA) given p. o. to rats previously infected with amebiasis, in a dose of 75 mg. /Kg. possesses an activity comparable to that of emetine hydrochloride injected s. c. in a dose of 5 mg. /Kg. Since the LD 50 is 2. 3 gm. /Kg. and 11. 45 gm. /Kg. respectively, the chemotherapeutic index of this new derivative (1/30) expresses a margin of safety much greater than that of emetine hydrochloride (1/2. 3). (Author)

Denisenko, P. P.
PHARMACOLOGY OF CENTRAL CHOLINOLYTICS. [1961] [11]p. 53 refs.
Order from OTS or SLA $1.60 61-28424

Trans. of Akad[emiya Meditsinkikh] Nauk SSSR. Vestnik, 1960 [v. 15] no. 2, p. 20-30.

DESCRIPTORS: *Pharmacology, *Nervous system, Drugs, *Vasomotor drugs, *Cholinesterase, *Acetylcholines.

Dettli, L. and Spring, P.
COMPARATIVE PHARMACOLOGICAL INVESTIGATION OF A NEW SALIDIURETIC (CYCLOPENTHIAZIDE) IN HEALTHY MAN: A METHODICAL CONTRIBUTION TO THE TESTING OF DIURETICS (Vergleichende Pharmakologische Prufung eines Neuen Salidiuretikums (Cyclopenthiazid) am Gesunden Menschen: Ein Methodischer Beitrag zur Testung von Diuretika). Oct 1960, 17p. 11 refs.
Order from SLA $1.60 61-20776

Trans. of Z[eitschrift für die] Ges[amte] Exp[erimentelle] Med[izin] (Germany) 1960, v. 134, no. 3, p. 310-322.

DESCRIPTORS: *Pharmacology, Toxicity, *Cyclopentanes, *Thiazines, *Diuretics.

The following problems were studied: (1) quantitative diuretic and saluretic activity, (2) qualitative type of action, (3) course of action in regard to time, and (4) acute side effects (tolerance). Hydrochlorothiazide (HCT) was chosen as a comparative diuretic. (Author)

Dittrich, P.
ARTIFICIAL KIDNEY AND DORIDEN INTOXICATION (Kunstliche Niere und Doriden-Vergiftung). [1961] [1]p.
Order from SLA $1.10 61-20183

Trans. of Münch[ener] Med[izinische] W[ochen]-schr[ift] (West Germany) 1961, v. 103, p. 1174.

DESCRIPTORS: *Drugs, Toxicity, *Artificial kidney, *Urine, Urinary tract, Kidneys, *Narcotics.

Frommel, Ed. and Fleury, C.
PHARMACODYNAMICS OF TRASENTINE AND ATROPINE AS TRANQUILLIZERS (De la Pharmacodynamie de la Trasentine et de l'Atropine comme Tranquillisants). July 61, 5p. 18 refs.
Order from SLA $1.10 61-20044

Trans. of Helv[etica] Physiol[ogica] et Pharm[acologica] Acta (Switzerland) 1960, v. 18, no. 3, p. C66-C67.

DESCRIPTORS: *Atropine, *Tranquilizing drugs, Pharmacology, Narcotics, Barbiturates, *Trasentine, Drugs.

Morgunov, I. N. and Khatuntsev, V. V.
ABOUT THE POSSIBILITY OF REPRODUCING BERING'S [SIC] PHENOMENON WITH TOXINS OF BAC. [CLOSTRIUM] HISTOLYTICUM AND VIBRIO SEPTICUS (PRELIMINARY REPORT) (O Vozmozhnosti Vosproizvedeniya Fenomena Beringa Toksinami Bac. Histolyticum i Vibrio Septicus (Predvaritel'noe Soobshchenie)). 20 Apr 61, 2p. Trans. V-1679.
Order from OTS or SLA $1.10 61-19766

Trans. of mono. Nauchno-Issledovatel'skii Institut Epidemiologii i Mikrobiologii, Kiev. Materialy Nauchnykh Konferentsii, Kiev, 1959, p. 179-180.

DESCRIPTORS: *Microbiology, Mice, *Clostridium histolyticum, *Vibrio, Clostridium perfringens, Staphylococcus, *Acquired immunity, Immunization, *Bacterial toxins, *Toxicity.
Twenty-four mice were given 12 daily intravenous injections of 1/5 minimum lethal dose (MLD) of the toxin of Bac. (Cl.) histolyticus. None of the mice died, indicating that neither summation of toxic stimulations, nor accumulation of the toxin occurred. The mice were then given 1 MLD of the toxin; all of the mice died, demonstrating that they had not developed any immunity to these toxins. The toxin of Vibrio septicus were tested in the same manner and with the same results. It is concluded that summation of toxic stimulations is not connected with the development of immunity (Behring's phenomenon) in the experimental animals. This coincides with the authors' findings in earlier work with the toxins of Staphylococcus and of Bac. (Cl.) perfringens. (See also 61-19767).

Osetrov, V. I.
EXPERIMENTAL DATA ON THE TOXICOLOGY OF THE INSECTICIDE HEPTACHLOR (Eksperimental'nye Dannye po Toksikologii Insektitsida Geprakhlor). [Dec 61] 6p. 13 refs. PL-480 Int.
Order from OTS $0.50 61-11488

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1958, v. 2, no. 5, p. 15-20.

DESCRIPTORS: *Toxicity, *Insecticides, Worms, *Pest control, *Heptanes, *Chlorine compounds, Animals, Liver, Kidneys, Lungs, Agriculture.

The use of heptachlor in agriculture requires full prophylactic measures against poisoning, in strict accordance with sanitary regulations concerning the work with chemical poisons. Heptachlor can penetrate into mammalian organisms through the alimentary tract, intact skin, mucous membranes, and the respiratory tract. The lethal concentration of technical heptachlor, for a single inhalation, is significantly lower than that of DDT. A single lethal dose of pure heptachlor, when administered through the gastrointestinal tract, is nearly equal to that of DDT and hexachlorocyclohexane. Heptachlor is more toxic than DDT in a single application to the intact skin. Heptachlor has pronounced cumulative properties. Various methods of administration of the product to the animals give similar clinical pictures of poisoning and indicate a primary affection of the nervous system resulting in an initial excitation followed later by inhibition of the functions of this system. After recurrent dermal administration and recurrent inhalation of the product, general depression, muscular adynamia and atony generally predominate over other symptoms of poisoning. The principal macroscopic changes found in dead animals indicate damage to internal organs, and particularly to the liver, kidneys, and lungs.

Rosner, J. M.
EVALUATION OF A NEW ORAL ANABOLIC (Valoracion de un nuevo anabolico bucal). Oct 61 [13]p. 28 refs.
Order from SLA $1.60 61-20772

Trans. of la Prensa Médica Argentina, 1960, v. 47, 28 Oct, p. 2918-2923.

DESCRIPTORS: *Metabolism, Growth, *Drugs, Proteins, Hormones, *Glucosides, Methyl radicals, Hydroxides, *Pharmocology, *Growth, *Stimulation, Androgens.

The results with a new synthetic anabolic agent, active perorally, are described; they were obtained in 20 children with poor weight and height development, ranging in age from 9 to 15 years. The drug used was methandrostenolone (17-α-methyl-17-β-hydroxy-androsta-1,4-diene-3-one) and it was used in a uniform dose of 5 mg. daily. The various etiological, endocrine, alimentary, infectious factors etc. were eliminated. The study was conducted over a period of 60 days, and clinical and radiological development checked every 15 days. In 5 patients the metabolism was studied, with determination of the protein balance before and during administration of the anabolic agent. In these same patients we tried to establish the minimal active dose. The average increase in height at the end of the experiment was 3.3 cm. (2%) and the weight gain (4.015 Kg.(13%). No edema or severe or mild virilizing effects were observed. (Author)

Radiobiology

Barmina, O. N.
THE INFLUENCE OF WHOLE-BODY X-IRRADIATION ON PROTEIN AND WATER METABOLISM IN THE BRAIN (Vliyanie Obshchego Rentgenovskogo Oblucheniya na Belkovyi i Vodnyi Obmen Golovnogo Mozga). 20 July 61 [8] p. 10 refs. JPRS: 9736.
Order from OTS or SLA $1.10 61-27231

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 2, p. 215-219.

DESCRIPTORS: *Metabolism, *Proteins, *Radiation effects, *Brain, Water, *X-rays.

A whole-body X-irradiation of animals (rats) influences the protein and water metabolisms of the brain. In the brains of rats irradiated with a dose of 500 r, two and 18 days after irradiation the rate of enzymic breakdown of protein is reduced. The content of protein nitrogen is somewhat reduced after two days and is increased after 18 days. The quantity of nonprotein nitrogen is increased. The content of total nitrogen remains unchanged after two days and is somewhat increased after 18 days. A change in the content of the total and free water in brains of rats two days after irradiation with a dose of 500 r is slight. An increase is noted in the water content bound to brain colloids. (Author)

Kuznetsova, N. N.
DISTANT (REMOTE) EFFECT OF IRRADIATION IN ROENTGEN INJURIES ON MAMMALS (Distantsionnoe Deistvie Radiatsii pri Luchevom Porazhenii Mlokopitayushchikh. [1961] 2p.
Order from OTS or SLA $1.10 61-28667

Partial trans. (conclusions, p. 444-445) of [Akademiya Nauk SSSR]. Inst[itut] Gen[etiki]. Trudy, 1958, v. 24, p. 435-445.

DESCRIPTORS: *Radiation effect, *Animals, Leukopenia, *X-rays, Mammals.

Kuznetsova, N. N.
ON "TOXIC" SUBSTANCES WHICH APPEAR IN THE BLOOD OF ANIMALS FOLLOWING THE EFFECT OF IONIZING IRRADIATION (O "Toksicheskikh" Veshchestvakh, Poyavlyayushchikhsya v Krovi Zhivotnykh Posle Vozdeistviya Ioniziruyushchei Radiatsii). [1961] 1p.
Order from OTS or SLA $1.10 61-28666

Partial trans. (conclusions, p. 451) of [Akademiya Nauk SSSR] Inst[itut] Gen[etiki]. Trudy, 1958, v. 24, p. 446-451.

DESCRIPTORS: *Animals, *Radiation effects, *Blood, Toxicity

Smirnova, O. A.
INFLUENCE OF IONIZING RADIATION ON METABOLISM OF BRAIN PHOSPHOLIPIDS (Vliyanie Ioniziruyushchego Izlucheniya na Obmen Fosfolipidov Mozga). 20 July 61 [10]p. 21 refs. JPRS: 9735.
Order from OTS or SLA $1.10 61-27283

Trans. of Ukrayin'skyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 2, p. 208-213.

DESCRIPTORS: *Metabolism, *Brain, *Radiation effects, *Phospholipids, X-rays.

The phospholipid composition of the cerebrums of albino rats is characterized by a quantitative predominance of lecithins over cephalins; in the cephalin fraction the cephalins predominate, which are adsorbable by magnesium oxide, over the methanol-insoluble cephalins. Sphingomyelins are present in the brain in a small quantity. After a whole-body X-irradiation of albino rats with a dose of 500 roentgens the content of lecithins and particularly of cephalins adsorbable by magnesium oxide decreases. The quantity of phospholipids decreases even 24 hours after irradiation. After six days, the changes are slight. After 30 days, the phospholipid content in the same fraction decreases most markedly. A slight reduction in the sphingomyelin content is also noted. Changes in the lipid metabolism after irradiation have the nature of a prolonged process. (Author)

Vasil'ev, I. M.
THE EFFECT OF IONIZING RADIATIONS ON PLANTS (Deistvie Ioniziruyushchikh Izluchenii na Rasteniya). 11 Sep 61, 20p. JPRS: 10131.
Order from OTS $0.75 61-31605

Trans. of Agrobiologiya (USSR) 1961, no. 2, p. 259-269

DESCRIPTORS: *Plants, *Radiation effects.

The author expresses his point of view on the basic problems of plant radiobiology based on the study of world literature on this question and extensive experimental investigations carried out during the past five years together with his coworkers at the Institute of Biological Physics of the Acad Sci USSR. His point of

view is based on the fact that the biological effect is induced by the emergence of the arrest of growth in the irradiated plants while all other physiological processes remain intact, with the result that the plants become replete with plastic substances which had not been utilized for growth and perish in the final result. In the irradiated plant, toxins are produced in the form of oxidized compounds and, despite the fact that the plant resists their excessive accumulation, they exert their influence: the plant enters the stage of an arrested growth which is induced by the stimulation of toxins; it is transmitted to all meristematic cells, independently of the fact whether any toxic products have entered them or not. It is important that they had formed at some place or other in quantities unusually large for the plant (though their absolute figure can be very small). However, the growth arrest is a reversible process. It is not connected with any injury, even less with the destruction of cells. Cells in the stage of growth arrest are fully alive and are capable of reverting again to the stage of growth.

Surgery

Demikhov, V. P.
EXPERIMENTAL TRANSPLANTATION OF VITAL ORGANS. Nov 61, approx. 250p.
Order from CB $12.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Transplantation, *Spleen, Blood circulation, *Kidneys, *Head.

Lytkin, M. I. and Povstyanoi, N. E.
THE POSSIBILITY OF TISSUE ACCEPTANCE OF FREE SKIN GRAFTS WHEN TRANSPLANTED ON VARIOUS TISSUES (O Vozmozhnosti Prizhivleniya Svobodnykh Kozhnykh Loskutov pri Peresadke Ikh na Razlichnye Tkani). 13 Sep 61 [8]p. JPRS: 10141.
Order from OTS or SLA $1.10 61-28615

Trans. of Vestnik Khirurgii (USSR) 1961, v. 86, no. 6, p. 80-83.

DESCRIPTORS: *Tissues (Biology), Transplantation, *Skin.

Zoology

Belopol'skii, L. O.
ECOLOGY OF SEA COLONY BIRDS OF THE BARENTS SEA, tr. by R. Ettinger and C. Salzmann. 1961, 346p. 302 refs. PL-480 Smi.
Order from OTS $3.50 61-11487

Trans. of mono. Ekologiya Morskikh Kolonial nykh Ptits Barentsova Morya, Moscow/Leningrad, 1957 [460p.].

DESCRIPTORS: *Birds, *Barents sea, *Arctic regions, *Ecology, *Diet, Food, Nutrition, *Reproduction, *Eggs, *Sex, *Bibliography, Bird navigation, Growth, Biology.

The author analyzes the general conditions of life in the bird colonies of the Barents Sea and devotes his main attention to the questions of ecology. He investigates in detail the nutrition of sea birds, their methods of obtaining food, their diet and changes in their diet, the nature of the nutrition of various age groups, the relationship between the various ingredients of their diet, etc. He also examines in detail the reproduction of sea birds, taking into account the composition and the dynamics of the bird population, fecundity, etc. A large section of the book is devoted to intra- and inter-specific relations between the bird colony of the Barents Sea, the mutual relationship between birds and their food, the effect of predatory activity, and the relationship between the species as a factor in the establishment and development of sea-bird colonies. (Publisher's foreword)

Bösiger, E. and Faucher, P.
BIRDS OF THE NIGHT. No. 6 of World of Nature [series]. [1961].
Order from OB 7s 6d

Trans. of unidentified mono. pub. Paris.

DESCRIPTORS: *Birds, Biology, *Dark adaptation

Kozlova, E. V.
BIRDS, VOL. 2, NO. 3, CHARADRIIFORMES SUBORDER ALCAE, (Ptitsy, tom 2, vyp. 3, Rzhankoobraznye Podotryad Chistikovye) tr. by R. Ettinger. [Dec 61] 140p. 80 refs. PL-480 Smi.
Order from OTS $1.50 60-21815

Trans. of Fauna S.S.S.R. Novaya Seriya, 1961, v. 65.

DESCRIPTORS: *Birds, *Age, *Anatomy, Feathers, Underwater navigation, Ecology, *Classification, *Skeleton, Bird navigation.

Like the four preceding parts (published between 1937 and 1947 and devoted to the study of birds) the present volume is based mainly on investigations of collected material kept at the Zoological Institute of the Academy of Sciences of the USSR. Attention is paid to functional-morphological analysis as well as to an elaborate characterization of species; the plumage is also described in detail with regard to seasonal changes and age differences.

CHEMISTRY

Muramatsu, K.
AN APPARATUS FOR VACUUM FUSION ANALYSIS. [1961] 12p.
Order from ATS $22.75 ATS-57N53J

Trans. of Toshiba Rev[iew] (Japan) 1956, v. 11, no. 12, p. 1349-1356.

DESCRIPTORS: Analysis, *Vacuum apparatus.

Analytical Chemistry

Carugno, N., Giovannozzi-Sermanni, G., and Wittmer, G.
GAS CHROMATOGRAPHY OF TOBACCO SEED OILS AND PRELIMINARY OBSERVATIONS ON THE CYTOLOGICAL ACTIVITY OF SOME OF THEIR COMPONENTS. [1961] 8p. (2 figs. omitted) 18 refs.
Available on loan from SLA 62-10395

Trans. of il Tabacco (Italy) 1961, v. 65, p. 219-228.

DESCRIPTORS: *Tobacco, *Seeds, *Oils, Gas chromatography, Histology.

Analysis of qualitative and quantitative composition of cold extracted oils from fresh and aged seeds of N. tabacum /cv. Bright/ and N. Rustica /cv. Erbasanta/ was carried out by means of gas-chromatography. Among the various fatty acids which enter in the composition of oils, the following acids with a low number of carbon atoms were identified for the first time: formie, acetic, propionic, butyrric valeric and myristic acid. As oils had showed toxic and mutagenic activity on the Allium Cepa cytological test, a control of the biological activity of these acids were started. First results indicate that the propionic acid / at the concentration of 13×10^{-3}M and 13×10^{-4}M, pH 6.4/ shows a high toxic action, but no mutagenic activity. (Author)

Carugno, N.
DETECTION AND DETERMINATION IN TOBACCO SMOKE OF SUBSTANCES FORMED BY THE DECOMPOSITION OF ZINC ETHYLENEBISDITHIOCARBAMMATES. [1961] 5p. (3 figs. omitted 10 refs.
Available on loan from SLA 62-10396

Trans. of il Tabacco (Italy) 1961, v. 65, p. 238-244.

DESCRIPTORS: *Tobacco, *Smokes, *Hydrogen compounds, *Carbon compounds, *Sulfides, Detection, Determination, Zinc, Ethylenes, Carbamates, Thio radicals, Decomposition.

A method is elaborated for detecting and determining H_2S and CS_2 in the smoke of tobacco, originated by decomposition of ethylenebisdithiocarbammate of zinc. The mixing colorimetrical methods are herewith described. The complete decomposition of zinc ethylenebisdithiocarbammate in the burning procedure of tobacco was ascertained. (Author)

Eberius, Ernst and Kowalski, Werner.
CONTRIBUTION TO THE DIRECT DETERMINATION OF COMBINED OXYGEN IN METALS AND METAL OXIDES. I. DETERMINATION OF ZINC OXIDE IN ZINC DUST AND ZINC ASHES. [1959] 13p. 11 refs.
Order from SLA $1.60 61-20594

Trans. of Zeitschrift für Erzbergbau und Metallhüttenwesen (West Germany) 1954, v. 7, no. 6, p. 229-234. Another trans. is available from BISI £3 5s as BISI-1192 [1959].

DESCRIPTORS: *Zinc compounds, Oxides, Oxygen, Metals, Separation, Solids, Particles, Ash, Processing, Solutions, Metallurgical analysis.

The method described permits titrimetric determination of the oxide content, after dissolving the substance in an anhydrous hydrogen chloride/glacial acetic acid mixture, in several minutes without use of any elaborate apparatus. (Author)

Eckhardt, F. and Heinze, H.-O.
COMPARISON OF CONVENTIONAL ANALYTICAL METHODS FOR VALUABLE COAL CONSTITUENTS BY MEANS OF GAS CHROMATOGRAPHIC AND SPECTROSCOPIC ANALYSIS (Vergleich Konventioneller Untersuchungsverfahren für Kohlenwertstoffe mit der Gaschromatographischen und Spektroskopischen Analyse). [1961] [23]p. (foreign text included).
Order from SLA $2.60 61-20077

Trans. of Brennstoff-Chemie (West Germany) 1961, v. 42 [no. 4] p. (50-54) 136-140.

DESCRIPTORS: Coal tar, Pyridines, Phenols, Naphthalenes, *Gas chromatography, *Spectrographic analysis, Chromatographic analysis

The conventional analytical methods for valuable coal constituents are compared with gas-chromatographic methods which have been supplemented by spectroscopic analyses. By means of examples of investigations of bituminous coal tar fractions, pyridine bases, phenols and naphthalenes, the superiority of the new methods is demonstrated. (Author)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 5. 1961, 294p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4453

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 5, p. 1065-[1269].

DESCRIPTORS: *Inorganic chemistry, Chemistry, Periodicals, Alkali earth metals, Tartrates, Sulfates, Sulfur compounds, Oxides, Exchange reactions, Platinum compounds, Boron compounds, Zinc compounds, Calcium compounds, Oxides, Peroxides, Germanium compounds, Chlorides, Reaction kinetics, Cesium compounds, Chromium compounds, Manganese, Fluorides, Chromium, Molybdenum, Alloys, Hall effect, Cobalt compounds, Oximes, Complex compounds, Copper compounds, Iron compounds, Sulfides, Molybdates, Niobium, Titanium, Ion exchange, Lead compounds, Titanates, Lithium compounds, Iodides, Preparation, Permanganates, Decomposition, Molybdenum compounds, Silicates, Plutonium, Oxalates, Perchloric acid, Acids, Selenium, Sulfur, Molecules, Thallium compounds, Chromates, Solubility, Tin, Hydroxides, Precipitation, Polarographic analysis.

Contents:

Polarographic determination of the beginning of precipitation of tin (II) hydroxide from hydrochloric acid solution and calculation of its solubility product, by I. N. Kovalenko
The preparation of anhydrous lithium iodide, by I. V. Tananaev and others
Electro-conductance of molten sulfides of tin, antimony, bismuth and nickel, by Yu. K. Delimarskii and A. A. Velikanov
The double chemical nature of actinides, by E. S. Makarov
The effect of heterogeneity on the decomposition of permanganate ions photochemically and in the dark, by A. A. Kachan and M. A. Sherstoboeva
Formation of $Ca(O_2)_2$ by irradiation of $CaO_2 \cdot 2H_2O_2$ with ultraviolet light, V, by I. I. Vol'nov and others
Effect of surface on the process of formation of $Ca(O_2)_2$ from $CaO_2 \cdot 2H_2O_2$, VI, by I. I. Vol'nov and V. N. Chamova
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Formation and study of the properties of certain oxalate compounds with hexavalent plutonium, by A. D. Gel'man and L. E. Drabkina
Preparation of some carbonate compounds of hexavalent plutonium and the study of their properties, by L. E. Drabkina
Study of some physicochemical properties of aqueous solutions of sulfatoaquotetramminecobaltisulfate, by Ya. A. Fyalkov and V. D. Panasyuk
The bases of cobalt dioximines, by A. V. Ablov
Compounds of bivalent platinum with triethylarsine, by Z. A. Razumova
Compounds of Cu, Ni and Co with oximes of the aliphatic series, by V. M. Bochkova and V. M. Peshkova
The study of reaction kinetics of inner sphere substitution in bivalent platinum compounds, by O. E. Zvyagintsev and E. F. Shubochkina
The study of reaction kinetics of inner sphere substitution in tetravalent platinum compounds, by O. E. Zvyagintsev and E. F. Shubochkina
Effect of outer sphere anions on the character of substitution in the inner sphere of complex compounds, II, by A. A. Grinberg and others
Spectrophotometric study on the existence of trans-influence in copper (II) halide complexes, by Jan Gazo
Borotartrates of alkali earth metals. III. Ammonium-calcium and ammonium-strontium boroditartrates, by E. M. Shvarts and A. F. Ievin'sh
Complex compounds of some bivalent metals with β - hydroxy - β naphthoic aldehyde, by V. I. Kumov and others
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The resistance of some silicides of molybdenum to acids, by T. Ya. Kosolapova and E. E. Kotlyar'
Study of the reaction between zinc oxide and boron trioxide by observation of luminescence, by Yu. A. Leonov
A study on the isotope exchange between some alkali sulfates and SO_3 at high temperatures, by Vikt. I. Spitsyn and I. E. Mikhailenko
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Author and subject index.

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 7. 1961, 342p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4455

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 7, p. 1473-[1717].

DESCRIPTORS: *Inorganic chemistry, Chemistry, Periodicals, Tellurium compounds, Dioxides, Vapor pressure, Gold compounds, Bromides, Dissociation, Zinc compounds, Sulfates, Pyrolysis, Halides, Ammonium compounds, Chlorides, Tantalum, Aluminum, Iron, Chemical reactions, Antimony, Solvent extraction, Minerals, Argon, Determination, Beryllium compounds, Acetates, Amines, Ethyl radicals, Butyl radicals, Nickel, Platinum, Chromium, Complex compounds, Calorimeters, Sodium compounds, Plutonates, Cerium, Lanthanum, Electrical conductance, Rare earth elements, Separation, Uranyl radicals, Nitrates, Hydrates, Dissociation, Perchlorate acid, Acids, Indium compounds, Plutonium compounds, Oxalates, Carbonates, Complex ions, Ions, Nickel compounds, Ethyleneamines, Ion exchange, Niobium compounds, Oxides, Sulfides, Magnetic properties, Potassium compounds, Sulfonates, Fluorides, Solubility.

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Determination of the saturated vapor pressures over solid tellurium dioxide, by V. P. Zlomanov and others
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Magnetic properties of the oxides and sulfides of niobium and tantalum of the lowest valence, I, by E. I. Krylov

Repulsion coefficient and degree of ionic character of the bond in alkali halides, I, by K. S. Krasnov and V. G. Antoshkin

The thermodynamics of reactions of chlorination of zirconium dioxide by gaseous chlorine, by B. D. Vasilenko and A. N. Vol'skii

The formation of an argon compound during its extraction from minerals, by T. V. Kol'tsova

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Isomerism of acidocomplexes of complex compounds of tetravalent platinum. IV. isomeric potassium dinitrodibromodichloroplatinates, by A. V. Babaeva and N. I. Ushakova

Complex compounds of platinum with acetylenic derivatives. IV. relative coordination stability of ligands with double bends of triple bonds, by S. V. Bukhovetz and K. A. Molodova

Determination of the composition and instability constant of the oxalate complex ions of plutonium (VI) by A. D. Gel'man and others

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The reaction between zinc and oxygen in a solution of alkali metal halides, by V. A. P'yankov and others

Determination of the number and kind of lower partial systems in multicomponent systems of any type, by F. M. Perel'man

Analysis of multicomponent systems by physical and physicochemical methods, by V. N. Skugorov

Errors in indirect methods of determination of concentration of microcomponents in solid phases, by G. I. Gorshtein

Crystalline structure of Ni_3Nb and Ni_3Ta compounds, by E. N. Pylaeva and others

The investigation of the system SnTe - PbTe, by N. Kh. Abrikosov and others

Interaction of ammonium chloride with chlorides of tantalum, niobium, titanium, aluminum and iron, by I. S. Morozov and D. Ya. Toptygin

Irreversible reciprocal system of acetates and nitrates of sodium and rubidium, by V. G. Gimel'shtein and G. G. Diogenov

Reciprocal system of fluorides and sulfates of sodium and rubidium, by V. A. Gladushchenko and A. A. G. Bergman

The systems $PbCl_2$ - $PbBr_2$ and $PbBr_2$ - PbI_2, by T. Modestva and T. Sumarokova

Study of solubility in the system $CsNO_3$ - HNO_3 - H_2O at 25°, by S. A. Shchukarev and others

The solubility polytherm of potassium fluorosulfonate, by I. G. Ryss and T. A. Gribanova

Solubility polytherm of $Na_3B_3O_3F_6$. equilibrium of the $Na_3B_3O_3F_6$ - NaI - H_2O system at 25°, by I. G. Ryss and I. I. Bogdanova

Solubility and composition of the solid phases of the system NH_3 - UO_3 - H_3PO_4 - H_2O, by L. S. Itkina and others

Electric conductivity of solutions of chlorides and sulfates of lanthanum and cerium containing hydrochloric acid and sulfuric acid, by S. I. Yakubson and N. A. Kostremina

Extraction of tri- and pentavalent antimony by solvents containing oxygen, by D. I. Ryabchikov and M. M. Privalova

Extraction of some rare-earth elements with tributyl phosphate, by V. Erzhabek and A. K. Lavrukhina

Study of coprecipitation by radiometric titration, by I. P. Alimarin and I. A. Sirotina

Complex compounds of platinum with diphenylacetylene in the inner sphere, by S. V. Bukhovets and N. K. Pukhova

Hall's coefficient for binary alloys of titanium with niobium, by N. V. Grum - Grzhimailo

Preparation and study of rare elements in the German Democratic Republic, by V. G. Tronev

Author and subject index.

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 11. [Dec 61] 224p. refs. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4459

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 11, p. 2433-[2582].

DESCRIPTORS: *Inorganic chemistry, Chemistry, Periodicals, Molybdenum, Tungsten, Carbonyl radicals, Niobium compounds, Berryllium compounds, Oxides, Reduction, Carbon, Silver compounds, Citrates, Bromides, Solubility, Rhenium compounds, Chlorides, Synthesis, Physical properties, Iridium, Ammonia, Complex compounds, Ruthenium compounds, Nitrates, Butyl radicals, Phosphates, Thallium, Iodides, Hydrochloric acid, Acids, Solutions, Titanium compounds, Oxalates, Titration, Rare earth elements, Ethylenedinitrilo tetracetates, Salts, Polarographic analysis, Hydrolysis, Decomposition, Metals, Hydroxides, Aging, Gold, Silver, Cobalt, Manganese, Copper, Chromium, Boron, Platinum, Alloys, Sodium compounds, Beryllium compounds, Fluorides, Phase studies, Eutectics, Lithium, Ammonium radicals, Nitrates, Acetamides, Water, Thermal conductivity, Viscosity, Cyanides, Cesium, Precipitation.

Contents:
Preparation of carbonyls of molybdenum and tungsten, by V. L. Volkov and others
The lower oxides of niobium, by S. I. Alyamovskii and others
Thermodynamical study of the reduction of beryllium oxide by carbon, by M. V. Smirnov and N. Ya. Chukreev
Determination of the solubility product of silver citrate at different ionic strengths of the solutions, by B. V. Ptitsyn and others
Solubility of silver bromate in aqueous solutions of sulfuric acid and of lithium, sodium and potassium sulfates, by Yu. L. Lel'chuk,
Dipyridine rhenium tetrachloride, its preparation and properties, II, by V. G. Tronev and G. K. Babeshkina
New complex compounds of iridium with ammonia, II, by V. V. Lebedinskii and Z. M. Novozhenyuk
Studies on the extraction of ruthenium nitrosotrinitrate with tributyl phosphate, by V. D. Nikol'skii and V. V. S. Shmidt
Interaction of potassium tetramethyl butynediol-trichloroplatinate with pyridine, ammonia, and other reagents, by K. A. Molodova
Formation of complex iodides of monovalent thallium in solutions, III, by F. Ya. Kul'ba and V. E. Mironov
The nature of hydrochloric acid solutions of pentavalent niobium, by S. I. Solov'ev and V. E. Krylov
Oxidizing potentiometric titration of complex titanium oxalates, by A. A. Grinberg and L. V. Shikheeva
Certain properties of complex acids formed by rare-earth elements with ethylenediaminetetraacetic acid, by N. D. Mitrofanova and others
Polarographic investigations of salts of rare-earth elements and their systems with some complex-forming agents, II, by N. A. Kostromina and S. I. Yakubson
Studies on the hydrolysis and decomposition of the salt $Na_4UO_8 \cdot 9H_2O$ in dilute solutions, by A. M. Gurevich and L. D. Preobrazhenskaya
Study of binary systems of metal hydroxides by X-ray analysis, II, by V. P. Chalyi and S. P. Rozhenko
Investigation of the system gold-silver-cobalt, by A. T. Grigor'ev and others
Investigation of alloys of the system manganese-copper-cobalt, by L. I. Topchiashvili and others
Phases formed in the system chromium-boron, II, by V. A. Epel'baum and others
Investigation of the heat resistance of platinum alloys containing rhodium, iridium, aluminum and chromium, by I. I. Kornilov and R. S. Polyakova
The phase diagram of the system $NaF—BeF_2$, by A. V. Novoselova and others
Conductivity and viscosity of systems consisting of Eutectic mixtures of lithium and ammonium nitrate and acetamide or water, by M. A. Klochko and F. P. Gubskaya
The mechanism of coprecipitation of microquantities of cesium with Prussian blue, by M. Kyrsh and O. E. Zvyagintseva
Author and subject index.

Goehring, Margot and Voigt, Dietrich.
DISULFUR DINITRIDE AND A SULFUR NITRIDE OF THE SERIES $(SN)_x$ (Über Dischwefel-Dinitrid, S_2N_2, und Polyschwefelstickstoff, $(SN)_x$). [1961] [24]p. (foreign text included) 21 refs.
Available on loan from SLA 62-10443

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1956, v. 285 [no. 3/6] p. 181-190
Other translations are available from ATS $12.60 as ATS-44L36G [1960] 9p. and from SLA mi$1.80, ph$1.80 as 60-16909, Dec 56, 7p.

DESCRIPTORS: *Sulfur compounds, *Nitrides, Decomposition, Polymerization, Dissociation, Chemical analysis

For abstract see Technical Translations 4: 447, 1960.

Krylov, O. V. and Sinyak, Yu. E.
NEW CATALYSTS FOR THE POLYMERIZATION OF ETHYLENE OXIDE. [1961] 3p.
Order from ATS $5.50 ATS-56N54R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 6, p. 898-900.

DESCRIPTORS: *Ethylene oxide, *Polymerization, *Catalysts.

Organic Chemistry

IMPROVEMENTS IN PROCESSES FOR THE SEPARATION OF AROMATIC ISOMERS. [1961] 17p.
Order from ATS $29.95 ATS-74N56F

Trans. of Belgian patent 588,211, by Union Oil Co., USA [1959].

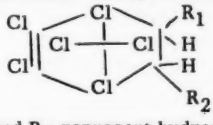
DESCRIPTORS: *Isomeric transitions, Separation.

METHOD FOR THE PREPARATION OF BICYCLOHEPTENE DERIVATES CONTAINING CHLORINE. [1961] [8]p. 1 ref.
Order from OTS or SLA $1.10 61-18615

Trans. of Dutch patent 80063, cl. 124 cb 1c, C. D. 547.592.2, by Ruhrchemie Aktienesellschaft, request no. 183027, submitted 21 Nov 53, issued 15 July 55.

DESCRIPTORS: *Cycloheptene derivatives, Synthesis, *Hexachlorocyclopentadiene, Pentadienes, Ethylenes, Diels-Alder reactions, Dienes, *Chlorine.

A method is proposed for preparing bicycloheptene derivates by means of condensation according to the Diels and Alder reaction of hexachlorocyclopentadiene and a dienophenyl. The method is characterized by the fact that compounds are prepared having the general formula:



in which R_1 and R_2 represent hydrogen, alkylgroups with straight or with branched chains, by reacting hexachlorcyclopentadiene with mono alkenes, containing up to 18 C-atoms with the formula $R_1\text{-}CH{=}CH\text{-}R_2$ at a temperature between 100° and 250°C.

NEW N-DI-(ALKYLMERCURY)-ARYL SULPHAMIDES. 1960, 1800 words.
Order from TTIS $10.00 TTIS-N.S.-2

Trans. of German patent 1,084,723, appl. 23 Dec 58, pub. 7 July 60, by Pharm. Fabriken.

DESCRIPTORS: *Sulfamide, Alkyl radicals, Mercury compounds.

ORGANIC COMPOUNDS OF TITANIUM. [1961] 7p.
Order from ATS $13.50 ATS-60N57F

Trans. of Belgian patent 560,503, by Societe Belge du Titane SA, appl. filed 3 Sep 57, granted 30 Sep 57 [Priority: U. S. patent application filed by D. F. Herman 5 Oct 56].
Another trans. is available from RIS $24.00 as RIS-96962 [16 Jan 59] 11p.

DESCRIPTORS: *Titanium compounds, *Organic compounds, Ethylenes, Polymers, Synthesis, Catalysis.

For abstract see Technical Translations 1: 359, 1959.

Adrova, N. A., Koton, M. M., and Klages, V. A.
PREPARATION OF NEW ORGANOTIN POLYMERS. [1961] 4p.
Order from ATS $4.50 ATS-26N56R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 7, p. 1041-1043.

DESCRIPTORS: *Polymers, *Metalorganic compounds, *Tin compounds.

Balandin, A. A. and Fedorov, V. S.
CATALYTIC DEHYDROGENATION OF CYCLOPENTANE IN THE PRESENCE OF CHROMIC OXIDE. [1961] [1]p. 9 refs.
Order from OTS or SLA $1.10 61-20820

Reprint of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 1, p. 21-22.

DESCRIPTORS: *Cyclopentanes, Pentanes, Dehydrogenation, Catalysts, Chromium compounds, Oxides, Catalysis.

The dehydrogenation of cyclopentane over chromic oxide takes actually place, this being in agreement with the point of view expressed in the paper published elsewhere. By the order of its magnitude, the rate of the dehydrogenation of cyclopentane is quite comparable with the rate of the dehydrogenation of cyclohexane over a similar catalyst consisting of chromic oxide. Thus, under these conditions (the initial stage of the reaction at high temperatures) the difference existing between the dehydrogenation of cyclohexane and cyclopentane disappears to a considerable degree, this supporting the edge mechanism of the reaction in the presence of chromic oxide. (Author)

Balandin, A. A., Sovalova, L. I., and Slovokhotova, T. A.
CATALYTIC DEMETHYLATION OF α-PICOLINE TO PYRIDINE WITH WATER VAPOR. [1961] (4 figs. omitted) 14 refs.
Order from OTS or SLA $1.10 61-20577

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, p. 79-82.

DESCRIPTORS: *Pyridines, *Pyridine derivatives, Synthesis, Water vapor, Vapors, Chemical reactions, Nickel, Aluminum compounds, Oxides, Catalysts, Catalysis.

Ballio, Alessandro and Almirante, Luigi.
PERACETIC ACID AS A REAGENT IN THE PREPARATION OF PHENOLS. [1961] [11]p. 13 refs.
Available on loan from SLA 62-10065

Trans. of mono. [paper] presented at the Congress of Industrial Chemistry (no. 23) (Nation-Wide Chemical Congress (no. 6)) [held at] Milano, 17-23 Sep 50.

DESCRIPTORS: *Phenols, Synthesis, Acetic acids, Reagents, Oxidation, Acetophenones, Phenones, Chemical reactions, Acids.

Binger, P. and Köster, R.
CYCLOPROPANE HYDROCARBONS FROM ALLYL HALIDES. [1961] 5p. 6 refs.
Order from SLA $1.10 61-20270

Trans. of Tetrahedron Letters (U. S.) 1961, no. 4, p. 156-160.

DESCRIPTORS: *Propenes, *Hydrocarbons, Synthesis, *Allyl radicals, *Halides, Chemical reactions.

Frolova, M. I., Nevskii, L. V., and Ryabov, A. V.
INVESTIGATION OF PHOTODEGRADATION BY THE USE OF RADIOCARBON C^{14}. Pt. 2 of the Aging of Poly(Methyl Methacrylate) under the Action of Light. [1961] 6p.
Order from ATS $8.95 ATS-57N54R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 6, p. 877-881.

DESCRIPTORS: *Photochemical reactions, *Radioactive isotopes, Polymers, Light, Chemical reactions, Aging, *Acrylic resins.

Grossfuss, E.
METHOD FOR THE SEPARATION OF EARTH ACIDS AND THEIR PURIFICATION FROM TUNGSTIC AND TITANIC ACIDS WITH USE OF COMPLEXONE III FOR THE SEPARATE DETERMINATION OF NIOBIUM AND TANTALUM IN ALLOY STEELS. Sep 61, 1600 words.
Order from HB $4.80 HB-5188

Trans. of Neue Hütte (East Germany) 1961, v. 6, no. 3, p. 181-182.

DESCRIPTORS: *Niobium, *Tantalum, *Steel, Separation, Purification, Acetic acids, Ethylenedinitrilotetracetates, Sodium compounds, Tungsten, Titanium.

Hoffmann, Ernst G.
ADIABATIC CRYOMETRY AND ITS APPLICATION TO ORGANOALUMINUM COMPOUNDS. [1961] 29p. 28 refs.
Order from SLA $2.60 61-20457

Trans. of [Justus] Liebigs Ann[alen der] Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 104-121.

DESCRIPTORS: *Cryogenics, Thermometers, Measurement, *Low temperature research, Freezing, Liquids, Determination, Molecular weight, Aluminum compounds, Metalorganic compounds, Organic solvents, Chemical equilibrium, Valence, Exchange reactions.

Kochkin, D. A., Kotrelev, V. N. and others.
ORGANOTIN POLYMERS. [1961] 4p.
Order from ATS $4.00 ATS-56N56R

Trans. of Vysokomolukelyarnye Soedineniya (USSR) 1959, v. 1, no. 3, p. 482-484.

DESCRIPTORS: *Polymers, *Metalorganic compounds, *Tin compounds.

Korotokov, A. A. and Truchmonova, L. B.
THE QUESTION OF THE NATURE OF THE ACTION OF COMPLEX CATALYSTS ON THE POLYMERIZATION REACTION OF VINYL COMPOUNDS. [1961] 6p. 16 refs.
Order from OTS or SLA $1.10 61-20628

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 117, no. 4, p. 635-637.

DESCRIPTORS: Vinyl radicals, Styrenes, Acrylonitriles, *Polymerization, Complex compounds, *Catalysts, Catalysis.

It is probable that in the case of complex catalysts, from the nature of their crystalline structure, the adsorbed molecules of the monomer react with the activated center on the surface of the catalyst. It is natural, that the speed of polymerization seems slowed down in those compounds which are adsorbed only in a very small degree on the surface of the catalyst, for example, isobutylene, 2-butene, etc. On the other hand, the molecules of simple unsaturated hydrocarbons (ethylene, propylene, primary butylene) are activated, thanks to absorption, and in such activated state become capable of reacting with great speed with the activated centers on the very same surface of the catalyst. On using general acid catalysts (aluminum chloride, boron fluoride, and others), because of the absence of a pre-activation of the molecules the speed of polymerization of the enumerated monomers is small, but the polymers which are formed have high molecular weight. (Extract)

Liberman, A. L.
INVESTIGATIONS IN THE FIELD OF HYDROCARBON CHEMISTRY AND THE CATALYTIC TRANSFORMATIONS OF HYDROCARBONS. [1961] 33p.
Order from ATS $38.75 ATS-19N54R

Trans. of #Uspekhi Khim[ii] (USSR) 1961, v. 30, no. 5, p. 563-592.

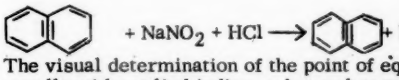
DESCRIPTORS: *Hydrocarbons, Catalysis, Transformations.

Matrka, M.
TITRATION OF 1-NAPHTHOL WITH SODIUM NITRATE. [1961] 2p. 4 refs.
Order from SLA $1.10 61-20677

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1960, v. 25, p. 964-965.

DESCRIPTORS: *Naphthalenes, Titration, *Sodium compounds, *Nitrites

A quick method of titration was developed with a titrated solution of sodium nitrite in the presence of a hydrotropic sodium m-xylenesulfonate substance. The nitrosation of 1-naphthol takes place according to the equation



The visual determination of the point of equivalence, usually with applied iodine and starch paper, was completely useless and was replaced by potentiometric determination. The reduction method yields good results, with an error of 0.4%. It is more exact and convenient than the azo-combination method in spite of the fact that it does not distinguish 1- and 2-isomers, which are titrated jointly.

Nikolaev, R. S.
INVESTIGATION OF POLYMERS WITH THE POLARIZING MICROSCOPE. [1961] 4p.
Order from ATS $6.25 ATS-69N53R

Trans. of #Zavodskaya Lab[oratoriya] (USSR) 1961, v. 27, no. 4, p. 420-422.

DESCRIPTORS: *Polymers, Microanalysis, Microscopes.

Pshezhetskii, V. S., Kargin, V. A., and Bakh, N. A.
X-RAY INDUCED POLYMERIZATION OF ACETALDEHYDE IN THE CONDENSED PHASE. [1961] 6p.
Order from ATS $9.75 ATS-91N54R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 6, p. 925-930.

DESCRIPTORS: *Acetaldehydes, *Polymerization.

Shkodin, A. M., Izmailov, N. A., and Dzyuba, N. P.
PROPERTIES OF ACIDS AND BASES IN ACID SOLVENTS. VII. STUDY OF THE STRENGTH OF MINERAL ACIDS IN MONOCHLORO- AND TRICHLOROACETIC ACIDS. [1961] 8p.
Order from ATS $12.80 ATS-96N53R

Trans. of Ukrain[skii] Khim[icheskii] Zhur[nal] (USSR) 1954, v. 20, p. 595-601.

DESCRIPTORS: Acids, Organic solvents, Minerals, *Acetic acids, *Chlorides.

Slejhar, Jiri.
THE RIPENING OF VISCOSE. [1961] [43]p. 2 refs.
Order from SLA $4.60 61-18835

Trans. of Chemicky Prumysl (Czechoslovakia) 1953, v. 3[28] no. 7/8, p. 255-258; no. 9, p. 313-316; no. 10, p. 356-363.

DESCRIPTORS: *Cellulose, Processing, Oxygen, Chemical reactions, Xanthic acids, Acids, Sulfides

Analysis of experimental facts hitherto known and original observations indicate that sulfidation of alkali cellulose takes place in two steps: (1) slowly-formed but stable xanthates of the sixth hydroxyl, capable of subsisting even in a medium with a relatively low CS_2 concentration; and (2) rapidly-formed but unstable xanthates on the second and third hydroxyls, which require high concentration of CS_2 for their formation and decompose when that concentration decreases. Xanthates of the second type last only a short time in the product after sulfidation, and lead to easy solubility and filterability of the products. During mixing they decompose to a certain extent. The xanthates of the first type are conserved in the viscose even after dissolution and the content thereof falls slowly during ripening and only to the extent of the gradual appearance of free carbon disulfide upon its reaction with the alkali. A chemical equilibrium exists between the xanthate and the other components of the solution in which the xanthate groups gradually break down and re-form, assuming therewith a more regular distribution along the cellulose chains. The low-molecular, deeply-broken down products of the oxidation degradation of cellulose are esterified during sulfidation too, but their xanthates react rapidly with the alkali, the sulfur going into byproducts and the unesterified hydroxyls being regenerated. The addition of sulfite blocks the catalytic action of the hemicelluloses by inhibiting their sulfidation. (Author) (See also 61-16595)

Topchiev, A. V. and Krentsel', B. A.
POLYOLEFINES, tr. by A. D. Norris. Dec 61, 104p.
Order from PP approx $4.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Ethylenes, *Polymers

Topchiev, A. V., Magiev, M. F., and Shakhtakhtinskii, T. M.
SYNTHETIC MATERIALS FROM PETROLEUM, tr. by J. Burdon. Dec 61, 136p.
Order from PP approx. $4.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Petroleum, Hydrocarbons, Carbon compounds, Isomeric transitions, Materials, Plastics, Synthetic rubber, Synthetic fibers, Detergents, Dehydrogenation, Polymerization, Drugs.

Watson, Lloyd Morris.
PROCESS FOR MANUFACTURING ALKALI METAL DERIVATIVES OF CONJUGATE DIOLEFIN COMPOUNDS, 1961, 12p.
Order from SA $105.00

Trans. of [Japanese published] patent application 31101/1958 (division of patent application 21397/1956) by National Distillers and Chemical Corp., U. S. A., assertion of priority 17 Aug 55, filed 17 Aug 56, pub. 4 Feb 61, no. 520/1961.

DESCRIPTORS: *Alkali metals, Chemical elements, *Ethylenes, Hydrocarbons, Chemical reactions, Velocity, Aliphatic compounds, Sodium, Metalation, Manufacturing methods, Processing

Yakovleva, M. K., Sheinker, A. P., and Abkin, A. D.
STUDY OF THE MECHANISM OF RADIATIVE POLYMERIZATION. II. MECHANISM OF CARBONIUM POLYMERIZATION OF STYRENE AND METHYL METHACRYLATE UNDER THE ACTION OF GAMMA-RAYS. [1961] 6p.
Order from ATS $9.10 ATS-90N54R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 6, p. [828]-832.

DESCRIPTORS: *Polymerization, *Gamma rays, Radiation effects, *Styrenes, Carbon, Ions, Polymers, *Acrylic resins.

Zbirovsky, Miroslav and Ettel, Victor.
INVESTIGATIONS IN THE REGIONS OF ORGANIC FUNGICIDES. IV. PREPARATION OF BIS-TRICHLOROMETHYLTRISULFIDE AND ITS REACTION WITH MERCAPTO COMPOUNDS (Prace v Oblasti Organickych Fungicidu. IV. Priprava Bis-trichlormethyltrisulfidu a Jeho Reakce s Merkaptosloučeninami). [1961] [14]p. (foreign text included) 17 refs.
Order from SLA $1.60 61-20089

Trans. of Chem[icke] Listy (Czechoslovakia) 1958, v. 52, p. 105-108.

DESCRIPTORS: Organic compounds, *Fungicides, *Sulfides, Chlorides, Methyl radicals, Synthesis, *Thiols, Chemical reactions

The method for the high-yield preparation of bis-trichloromethyltrisulfide, and the reaction of this substance with various mercapto compounds during the concurrent decomposition of trisulfide, are described. (Author)

Physical Chemistry

Akhundova, N. A. and Belen'kii, M. S.
HIGH-TEMPERATURE OXIDATION OF CARBON MONOXIDE ON SPINELS. [1961] 6p.
Order from ATS $9.50 ATS-31N54R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft'i Gaz (USSR) 1960, v. 3, no. 12, p. 73-78.

DESCRIPTORS: *Carbon compounds, *Monoxides, Oxidation, Temperature, *Spinels.

Bakhman, N. N.
THE OPTIMUM ANGLE OF SLOPE OF PHOTOGRAPHIC REGISTRATION DURING MEASUREMENT OF RATE OF COMBUSTION (Ob Optimalnom Ugle Naklona Fotoregistratsii pri Izmerenii Skorosti Goreniya) tr. by B. M. Kassell. [1961] 3p. H-9896.
Order from OTS $0.50 61-31670

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 1, p. 94-97.

DESCRIPTORS: Photography, Flames, *Combustion, Detonation, Measurement, *Rotating drum cameras, Photographic film, Errors

It is shown that in the measurement of the rate of combustion with a drum camera, the optimum angle of slope of the camera to the direction of movement of the film, at which errors in measurement are at a minimum, can be considerably less than 45°. In many cases it should be taken at not more than 15 to 20°. (Author)

Barjot, R. and others.
ARRANGEMENT OF SURFACES CAPABLE OF UTILIZING THE SUN RAYS FOR THE PREPARATION OF WATER OR HOT SOLUTIONS (Agencement de Surface Suceptibles d'Utiliser les Rayons Solaires pour la Preparation d'Eau ou de Solutions Chaudes). [1961] 4p.
Order from AC $4.00

Trans. of French patent 763.867, 1934.

DESCRIPTORS: *Solar energy, Water, Liquids, Heating, *Surface temperature.

Brunisholtz, G. and Bonnet, J.
SEPARATION OF BORIC ACID FROM AMMONIUM ION AND METALLIC CATIONS BY MEANS OF ION EXCHANGERS. Pt. 1 of Determination of Boric Acid. [1961] 3p. (footnotes, table omitted).
Available on loan from SLA 62-10092

Trans. of Helvetica Chimica Acta (Switzerland) 1951, v. 34, no. 6, p. 2074-2075.

DESCRIPTORS: *Boric acid, Acids, Separation, Ions, Ion exchange, *Ammonium radicals.

Boric acid can be separated from the cations which impede its acidimetric determination (NH_4^+, Zn^{++} Ni^{++}, Fe^{+++}, Al^{+++}, etc.) by means of ion exchangers of the sulfonic type. The use of a mixed indicator (methyl red + methylene blue), instead of the commonly used methyl red, improves the titration conditions of boric acid in presence of inverted sugar and of the phenolphthalein. (Author)

Bohme, H. and Krause, W.
THE EXCHANGE BETWEEN TERTIARY AMINES AND CHLORINE IN AQUEOUS SOLUTION. [1961] [5]p. 8 refs.
Available on loan from SLA 62-10068

Trans. of unidentified German language article, n. p., n. d.

DESCRIPTORS: *Amines, *Chlorine, Solutions, Exchange reactions.

Csokan, P.
CONTRIBUTIONS TO THE TECHNOLOGY OF THE ANODIC OXIDATION OF ALUMINUM IN DILUTE, COLD SULFURIC ACID (Beiträge zur Kenntnis der Anodischen Oxydation von Aluminum in Verdünnter, Kalter Schwefelsäure). [1961] [15]p. (foreign text included) 22 refs.
Order from SLA $1.60 61-20744

Trans. of Metalloberfläche (West Germany) 1961, v. 15, no. 4, p. 113-117.

DESCRIPTORS: *Electrochemistry, *Aluminum, Oxidation, *Sulfuric acid, Acids, Chemical reactions

Experiments confirm the opinion that there is a major difference between anodizing of aluminum in dilute and cold sulfuric acid and anodizing according to the common practice. There are differences not only in the technological conditions, especially with respect to the current conditions of both processes, but there are also essential differences in the mechanism of anodic oxidation and the structure of the oxide coating formed. The physical-mechanical properties of oxide layers formed in dilute and cold sulfuric acid differ greatly from those found in normal anodic coatings. (Author)

Feuillade, G. and Marette, S.
INFLUENCE OF SURFACE PHENOMENA DURING DIFFUSION OF IMPURITY IN SILICON. [1961] [52]p. 31 refs.
Order from SLA $5.60 62-10096

Trans. of Journ[al] de Chimie Phys[ique] (France) 1960, v. 57, no. 3, p. 228-247.

DESCRIPTORS: *Silicon, Surface properties, *Impurities, Boron, Phosphorus, Gallium, Aluminum, Diffusion, Thermodynamics.

Kobeko, P. P. and Marei, F. I.
WETTING AND STRENGTH OF ADHESION (Smachivanie i Prochnost' Sklеivaniya). July 58 [8]p. 5 refs. [CRREL] Trans. 59.
Order from OTS or SLA $1.10 61-28423

Trans. of Zhurnal Tekhnicheskoi Fiziki, 1946, v. 16, p. 277-282.

DESCRIPTORS: *Adhesion, Moisture, Surfaces, Water, Liquids, Ice, Plastics, Polymers, Copper.

Korol, A. N. and Turkel'taub, N. M.
SELECTION OF SOLVENT FOR GAS CHROMATOGRAPHY. [1961] 8p.
Order from ATS $13.60 ATS-98N56R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 6, p. 61-66.

DESCRIPTORS: *Gas chromatography.

Lengyel, S.
STUDY OF THE PARTIAL DENSITY OF THE SOLVENT IN AQUEOUS SOLUTIONS OF ELECTROLYTES (Issledovanie Partsial'noi Plotnosti Rastvoritel'ya v Vodnykh Rastvorakh Elektrolitov) tr. by V. N. Pavloff. 1961, 14p. NRCC Technical Trans. 977.
Order from NRCC $1.00 NRCC C-3730

Trans. of mono. Trudy Soveshchaniya po Termodinamike i Stroeniyu Rastvorov, Akad. Nauk SSSR, Otdel. Khim. Nauk, Moscow, 1958, p. 144-151.

DESCRIPTORS: *Electrolytes, Solutions, *Organic solvents, Water, Electrostriction, Density.

Muramatsu, Koji.
VACUUM FUSION TECHNIQUES USING PLATINUM-NICKEL AND PLATINUM BATHS. Pt. 2 of the Determination of Micro Quantities of Gases in Molybdenum. [1961] 17p. 5 refs.
Order from SLA $1.60 61-20849

Trans. of Shinku (Japan) 1960, v. 3, no. 11, p. 416-429 Another trans. is available from ATS $37.40 as ATS-56N53J [1961] 17p.

DESCRIPTORS: *Gases, *Separation, Gaseous diffusion separation, Microanalysis, Microchemistry, *Molybdenum, Purification, Platinum, Nickel, Oxygen, Nitrogen, Hydrogen, Carbon, Monoxides, Carbon compounds, Vacuum apparatus

Vacuum-fusion gas-extraction techniques using platinum-nickel bath at 1800°C and platinum baths from 1900° to 2050°C were examined to determine micro-gases in molybdenum and the maximum permissible molybdenum content in fluid platinum for effective gas extraction. Microscopic examination was also carried out in order to see the graphite precipitated from bath alloys. The platinum bath gives the most reliable results, and allows a simultaneous determination of oxygen, nitrogen, and hydrogen. The reproducibility of the results found with a 1-g sample is about ± ppm for both oxygen and nitrogen at their concentrations of about 30 ppm and 10 ppm, respectively, while that of hydrogen determination is about ±0.1 ppm at concentrations below 1.0 ppm. The platinum-nickel bath gives results similar to those obtained with the pure nickel bath. The use of such a mixed bath offers no advantage. In the platinum bath technique, the maximum amount of molybdenum dissolvable in platinum containing carbon is, with respect to the amount of Pt-Mo-C alloys, about 10 weight % at 1950° C, 20 weight % at 2000° C, and 70 weight % at 2050° C. The amount of carbon dissolved or deposited in the platinum bath is much smaller than that in the nickel bath. The nickel bath technique does not give reliable results.

Napolitano, L. G. and Socio, L. de.
NONSTEADY HOMENTROPIC FLOWS OF REACTING MIXTURES IN CHEMICAL EQUILIBRIUM [Moti Instazionari Omoentropici di Miscele Reagenti in Equilibrio Chimico]. [1961] 21p. 12 refs.
Order from SLA $2.60 61-14910

Trans. of l'Aerotecnica (Italy) 1960, [v. 40] no. 3, p. 172-177.

DESCRIPTORS: Mixtures, Chemical reactions, *Gas flow, *Gas ionization, *Fluid mechanics, Thermodynamics, *Chemical equilibrium, Equations of state, Complex variables.

Nonsteady flows of mixtures of reacting fluids in thermodynamics equilibrium are studied. It is shown that introduction of a new thermodynamic function (Ψ) permits to reduce the study of these problems to that of the corresponding cases of nonreacting mixtures. The method is particularly useful in the case of homentropic flows for which Ψ assumes the significance and value of a true state variable. For example, it is shown how it is possible to define generalized Riemann variables in terms of Ψ which have the well-known property of the classical Riemann variables, and how it is possible to extend all procedures for solving nonsteady, homentropic flows of classical fluid dynamics to the flows in question. Finally, considering the importance of the function thus developed, the procedure for calculating Ψ from the partition function of the constituents of the mixture is applied to the case of a Lighthill gas and to that of air in equilibrium. (Author)

Peter, S. and Wagner, H.
THE METHODICS OF ACCURATE VISCOSITY MEASUREMENTS WITH CAPILLARY VISCOSIMETERS. I. GEOMETRIC IRREGULARITIES, ADJUSTMENT IN THE FIELD OF GRAVITY, VALIDITY OF THE COUETTE-HAGENBACH CORRECTION AND HOLDUP ERROR (Zur Methodik Genauer Viskositätsmessungen mit Kapillarviskosimetern. I. Geometrische Unregelmässigkeiten, Justierung im Schwerefeld, Gültigkeit der Couette-Hagenbach-Korrektur, Nachlauffehler). [1961] [24]p. (foreign text included) 14 refs.
Order from SLA $2.60 61-20269

Trans. of Zeitschrift für Physikalische Chemie [Frankfurt] (West Germany) 1958, Neue Folge, v. 17, p. 184-198.

DESCRIPTORS: *Hydrostatic pressure, *Viscosimeters, Measurement, Test methods, *Gravity, Velocity, Capillary tubes.

Equipment for the execution of precise viscosity measurements at different shear velocities or shearing stresses according to the capillary method is described. The influences of construction and adjustment of the viscosimeter in the field of gravity upon the result of measurement are investigated more closely. (Author)

Peter, S. and Wagner, E.
THE METHODICS OF ACCURATE VISCOSITY MEASUREMENTS WITH CAPILLARY VISCOSIMETERS. II. INFLUENCE OF THE CAPILLARY FORCES AND OF THE CHANGE OF THE HYDROSTATIC PRESSURE ON THE MEASUREMENT (Zur Methodik Genauer Viskositätsmessungen mit Kapillarviskosimetern. II. Einfluss der Kapillarkräfte und der Anderung des Hydrostatischen Druckes auf die Messung). [1961] [35]p. (foreign text included) 24 refs.
Order from SLA $3.60 61-20268

Trans. of Zeitschrift für Physikalische Chemie [Frankfurt] (West Germany) 1958, Neue Folge, v. 17, p. 199-219.

DESCRIPTORS: *Hydrostatic pressure, *Viscosimeters, Measurement, Surface tension, *Carbon tetrachloride, *Water, *Propanols, *Cyclohexanols, Capillary tubes.

The change of the hydrostatic pressure and of the capillary pull of the measurement liquid during the measuring process must be taken into account jointly in their action. These corrections were calculated for water, n-propanol, cyclohexanol and carbon tetrachloride. A method of interpolation is given for the determination of the corrections for liquids with any density and surface tension. The magnitudes of hydrostatic and surface tension corrections for Ostwald-Ubbelohde viscosimeters, as well as with suspended level, are calculated and discussed. (Author) (See also 61-20269)

Peter, W. and Matz, W.
THE TRANSFORMATION BEHAVIOUR OF 12-14% Cr STEELS. [1961] [39]p. 16 refs.
Order from SLA $3.60 61-20595

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1957 [v. 28, no. 12] p. 807-823.
Another trans. is available from BISI £9 10s as BISI-1197 [1959].

DESCRIPTORS: *Steel, Phase studies, *Chromium alloys, Transformations, Eutectics, *Austenite, Temperature, Metallurgical analysis.

Schäfer, Harald and Nickl, Julius.
THE EQUILIBRIUM REACTION Si + $SiCl_4$ = 2 $SiCl_2$ AND THE THERMOCHEMICAL PROPERTIES OF GASEOUS SILICON(II) CHLORIDE (Uber das Reaktionsgleichgewicht Si + $SiCl_4$ = 2 $SiCl_2$ und die Thermochemischen Eigenschaften des Gasförmigen Silicium(II)-chlorids). [1961] 18p. 11 refs.
Order from SLA $1.60 61-20531

Trans. of Z[ei]tschr[ift] f[ür] Anorg[anische] Chemie (East Germany) 1953, v. 274 [no. 4/5] p. 250-264.
Another trans. is available from SLA mi$2.40, ph$3.30 as 60-18007 [1960] 19p.

DESCRIPTORS: *Silicon, *Silicon compounds, *Chlorides, Chemical reactions, *Chemical equilibrium Thermodynamics, Chemical properties

For abstract see Technical Translations 4: 508, 1960.

Schilling, Helmut.
PHYSICAL INVESTIGATIONS ON MOLDED OBJECTS FROM POLYACROLEIN. [1961] [16]p. 23 refs.
Order from SLA $1.60 61-20503

Trans. of Kolloid-Zeitschrift (West Germany) 1961, v. 175, p. 110-119.

DESCRIPTORS: *Acroleins, *Polymers, Molding, Pressure, *Molding materials, Heating, Acrylonitriles, Catalysts, Molecular association, Molecular structure, Crystallization, Oxidation reduction reactions.

In the present work, the molding experiments with powdered polyacrolein in the pressure region from 800 kg/cm^2 to 18,000 kg/cm^2 are reported. It was found that a crosslinking reaction occurs in polyacrolein under the influence of pressure. Upon heating polyacrolein from 140°C. to 180°C., a cross-linking reaction was also observed. Various reaction mechanisms are discussed. The swelling behavior, the temperature dependence of the torsion modulus and the mechanical loss factor, the infrared absorption, and the x-ray diffraction of polyacrolein molded objects were investigated. For comparison purposes, articles molded from polyacrylonitrile and hard rubber powder were incorporated into the investigations. (Author)

Sobczyk, Lucjan.
DIELECTRIC POLARIZATION OF THE SYSTEM C_2H_5COOH: PYRIDINE IN DIETHYL ETHER.
30 June 61 [3]p. 1 ref.
Order from SLA $1.10 61-18717

Trans. of Roczniki Chemii (Poland) 1957, v. 31, p. 349-350.

DESCRIPTORS: *Propionic acids, Acids, Polarization, *Pyridines, *Ethyl ethers, Ethers, Organic solvents, Dielectric properties

Experiments indicated that an increase of polarity does not have a favorable effect on the course of the acid-base reaction since the reagents react strongly with the solvent molecules. A considerable increase of proton-donor and proton-acceptor properties of the solvent can, however, lead to ionization. This is possible, in particular, when the solvent has a tendency to create stable solvates with the forming ions. Water, as solvent, has strongly marked proton-donor and proton-acceptor properties, and it forms stable hydrates. The reaction of acids and organic bases occurs, in this case, by the intermediary of water molecules which lead to the ionization of reagents.

Zadumkin, S. N.
SURFACE TENSION AND HEAT OF SUBLIMATION OF SILICON, GERMANIUM AND TIN. [1961] 3p.
Order from ATS $4.00 ATS-13N56R

Trans. of #Fizika Tverdogo Tela (USSR) 1959, v. 1, no. 4, p. 572-573.

DESCRIPTORS: *Silicon, *Germanium, *Tin, Heat of sublimation, Surface tension

EARTH SCIENCES

Labeish, V. G.
ON THE DYNAMICS OF COASTAL CURRENTS (K Voprosu o Dinamike Pribrezhnykh Techenii). [Dec 61] 7p. 16 refs. PL-480 Int.
Order from OTS $0.50 60-51146

Trans. of Leningrad U. Vestnik (USSR) [1959] v. 14, no. 6, Seriya Geologii i Geografii, no. 1, p. 139-143.

DESCRIPTORS: *Ocean currents, Turbulence, Heat transfer, Earth, Climate.

The possibility of changing the climate of the earth by the artificial redistribution of insolational heat among the different areas of the globe is considered. Two phenomena associated with coastal currents are analyzed: (1) the process of turbulent exchange in the coastal zone, and (2) the appearance of countercurrents near the coasts of straits.

Climatology and Meteorology

Nikandrov, V. Ya.
SOME DATA ON THE WATER CONTENT OF FOGS IN THE ARCTIC (Nekotorye Dannye o Vodnosti Tumanov v Arktike) tr. by Richard M. Holden. May 61 [5]p. 1 ref. AmMetSoc-T-R-359+; AD-264 577.
Order from OTS or SLA $1.10 61-28825

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1959, v. 228, no. 1, p. 146-148.
Another trans. is available from ATS $6.65 as ATS-22M41R [1960] 4p.

DESCRIPTORS: *Atmosphere, *Fog, *Iced fog, Moisture, Abundance, Climatic factors, Heat transfer, Arctic regions.

Sevchenko, F. N., Varzhenevskii, N. S., and Kleban, L. S.
A PHOTO-ELECTRIC CLOUD METER (BASE AND TOP - TRS) WITH AN IMPULSE SOURCE OF LIGHT. [1961] [8]p. (1 fig. omitted) 6 refs. Trans. no. 67; [DSIR NLL] M. 2727.
Order from OTS or SLA $1.10 61-23338

Trans. of Nauc[hno]-Issled[ovatel'skii] Inst[itut] Gidromet[eorologicheskogo] Priborost[roeniya]. T[rudy] (USSR) 1959, no. 8, p. 23-29.

DESCRIPTORS: Meteorological instruments, Instrumentation, *Cloud height indicators, Photoelectric cells, Design.

A photo-electric cloud-meter, dropped from an aeroplane, has been developed, in which the deficiencies inherent in previous cloud-meters have been largely excluded. The main electrical arrangement of this cloud-meter, which includes an impulse source of light, a photo-electric cell, double-cascade impulse amplifier, modulator, generator of identification signals and radio transmitter. The photo-electric cell and the source of light are placed on the outside of it, in such a way that the optic axes of the source and of the receiver of light impulses are directed at a definite angle to each other and direct light from the photo-electric cell is excluded. The source of light continuously produces light impulses of a given frequency sharply distinguished from any possible extraneous change in the light. In the presence, in the volume, of cloud elements, the photo-electric cell is periodically illuminated by the impulses of scattered light with the given frequency from the switching on of the source of light. As a result of the illumination of the photo-electric cell by the impulses of scattered light, corresponding impulses of the photo-current arise in it which are coupled to the input of the double cascade amplifier. (Extract)

Voskresenskii, A. I. and Morachevskii, V. G.
AIRPLANE APPARATUS FOR MODIFYING SUPER-COOLED CLOUDS AND FOGS (Apparatura dlya Vozdeistvii na Pereokhlazhdennye Oblaka i Tumany s Samoletta) tr. by David Kraus. Mar 61 [11]p. 4 refs. AmMetSoc-T-R-349+; AD-264 575.
Order from OTS or SLA $1.60 61-28823

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1959, v. 228, no. 1, p. 155-151.
Another trans. is available from ATS $12.65 as ATS-24M41R [1960] 8p.

DESCRIPTORS: Airplanes, *Smoke generators, *Artificial precipitation, Fog, Clouds, Arctic regions, Silver compounds, Iodides, Sublimation, Smokes, *Aerosols, Carbon dioxide, Solidified gases, Meteorology.

Geology

INTERNATIONAL GEOLOGY REVIEW, VOL. 3, NO. 8, P. 645-738. Apr 61, 1v. 116 refs.
Order from AGI $5.00, $55.00/year

Trans. of Mineralogicheskii Sbornik (USSR) 1958, v. 12, p. 225-232, 255-269; Kazan (Japan) 1959 [2 ser.] v. 4, no. 2, p. 104-114; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1958 [v. 1] p. 92-122; Vsesoyuznoe Mineralogicheskoe Obshchestvo. Zapiski (USSR) 1958, v. 88, no. 5, p. 497-511; Vsesoyuznyi Nauchno-Issledovatel'skii Institut P'ezo-Opticheskogo Mineral'nogo Syr'ya (USSR) 1957, v. 1, no. 2, p. 41-51.

DESCRIPTORS: *Quartz, Sources, *Mining engineering, *Geology, *Mercury compounds, *Sulfides, *Coal, Deposits, *Iron, Metals, Ores, Minerals, Crystallization, Temperature, Determination, Solutions, *Earthquakes
Contents:
The genesis of kyanite in quartz veins, by Ivan Kostov
On the problem of the genesis of cinnabar and metacinnabarite, by G. L. Piotrovskii
On the quartz in the brown-coal deposits of Dubrovka and the Glinsk-L'vov region, by E. F. Sidorenko
Some laws governing the regional geologic occurrence of ferrous and non-ferrous metal ores, by E. E. Zakharov
Rate of crystallization of minerals, by D. P. Grigor'ev
The possibility of determining true temperatures of mineral-forming solutions, by N. P. Ermakov and V. A. Kalyuzhnyi
Study of eruptions and earthquakes originating from volcanoes, pt. 1: Statistical relations between eruptions and earthquakes of Asama Volcano, by Takeshi Minakami
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 3, NO. 9, P. 739-831. Sep 61, 1v. 189 refs.
Order from AGI $5.00, $55.00/year

Consists of an original article, by S. I. Tomkieff and trans. of Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 25-59; Mineralogicheskii Sbornik (USSR) 1958, v. 12, p. 196-224; Kazan (Japan) [1959, 2 ser.] v. 4, no. 2, p. 115-130.

DESCRIPTORS: *Geology, *Rock, *Nepheline, *Calcite, *Silicates, *Ores, *Minerals, *Earthquakes, *Volcanoes, *Rare earths, Sources.

Contents:
Alkalic ultrabasic rocks and carbonatites in the USSR, by S. I. Tomkeieff
On the types of metallogenic provinces and ore districts, by E. A. Radkevich
Mafic minerals in the differential traprock intrusives of the Noril'sk region, by M. N. Godlevskii and A. D. Bataliev
The study of eruptions and earthquakes originating from volcanoes, pt. 2: Some contributions to prediction of explosive eruption of volcano Asama, by Takeshi Minikami and others
Reference section
Recent translations in geology.

INTERNATIONAL GEOLOGY REVIEW, VOL. 3, NO. 10, P. 833-974. Oct 61, 1v. 158 refs.
Order from AGI $5.00, $55.00/year

Trans. of Sovetskaya Geologiya (USSR) 1960, no. 1, p. 10-33, 72-74, 126-134, 140-146; no. 2, p. 48-73, 115-124; no. 3, p. 28-39, 48-60, 113-121, 130-140; and Kazan (Japan) [1959, 2 ser.] v. 4, no. 3, p. 133-151

DESCRIPTORS: *Geophysics, *Geology, *Coal, Clays, Well logging, *Tin, Bauxite, Ores, Minerals, Mining engineering, Aluminum compounds, Oxides, *Rock metals, Silicates, Deposits, Oils, Volcanoes, *Earthquakes.

Contents:
Sovetskaya Geologiya (Soviet Geology) in translation, 1960, nos. 1, 2, 3: contents and translation availability
The structure of the basement of northern Turkmenia and Karakalpakia according to the results of geophysical investigations, by D. P. Kasatkin
A general estimate of the world's coal resources, by G. V. Korotkov
Concerning the nature of the organic matter in the lower cambrian Laminarites clays, by A. I.Ginzburg and M. M. Tolstikhina
Geothermal deep-well logging in the Omsk area, by G. E. Ryabukhin and I. I. Nesterov
From the history of the geological sciences, anniversaries from July-Dec 59, by V. V. Tikhomirov and T. A. Sofyano
Comparative characteristics of the tin-bearing granitoids of different ages of the South Primor'e and certain tin-bearing areas, by Ya. D. Gotman and M. G. Rub
Basic phases of the geotectonic development of the Azov-Kuban depression, by A. V. Chekunov
Potentials for prospecting and exploration of bauxite ores and high-alumina raw materials in the regions of Central Asia, by L. P. Konnov
Stratigraphic and correlative significance of terrigenous components of sedimentary rocks, by A. P. Sigov
Regularities in the distribution of nonferrous and precious metals in principal ore minerals and silicates of the Noril'sk deposits, by V. L. Ginzburg and G. B. Rogover
The extent of exploration of a mineral deposit preparatory to its commercial development, by P. S.Matveev and A. V. Nikiforov
The evolution of saline regimen in upper carboniferous and lower permian basins of Tataria and adjacent regions, by F. S. Mal'kovskii
Types of folding observed in coal deposits of the South Uralian Basin, by P. I. Il'in
Study of carboniferous stratigraphy on the east margin of the Volga-Ural oil regions, by O. L. Eynor: book review, by G. I. Teodorovich
Study of eruptions and earthquakes originating from volcanoes, pt. 3: Relation between depth of volcanic earthquakes and subsequent volcanic phenomena, by Takeshi Minakami and others
Notes on international scientific meetings
Reference section.

Amitrov, O. V.
SESSION OF THE ALL-UNION PALEONTOLOGICAL SOCIETY (NO. 7) [LENINGRAD, 24-28 JAN 61]. 6 Oct 61 [7]p. JPRS: 10415.
Order from OTS or SLA $1.10 61-28600

Trans. of Paleontologicheskii Zhurnal (USSR) 1961, no. 2, p. 141-143.

DESCRIPTORS: *Paleoecology, Scientific reports, Scientific organizations.

Anisimov, K. P. and Anisimova, M. V.
POROSITY OF CARBONATE RESERVOIRS. [1961] 2p.
Order from ATS $4.55 ATS-71N55R

Trans. of #Geol[ogiya] Nefti i Gaza (USSR) 1961, v. 5, no. 4, p. 38-39.

DESCRIPTORS: *Carbonates, *Hydraulic reservoirs, Porosity, USSR.

Anpilogov, A. P. and Orlov, L. I.
INTERPRETATION OF FIELD GEOPHYSICAL MATERIAL FROM THE DATA OF A STUDY OF PRESERVED CORES. [1961] 5p.
Order from ATS $7.80 ATS-02N56R

Trans. of #Geologiya Nefti i Gaza (USSR) 1961, v. 5, no. 6, p. 46-50.

DESCRIPTORS: *Geophysical prospecting, USSR.

Forsh, N. N. and Khramov, A. N.
CARBONIFEROUS AND PERMIAN PALEOMAGNETISM AND PALEOCLIMATES ON THE RUSSIAN PLATFORM. [1961] 5p.
Order from ATS $7.55 ATS-34N54R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 154-157.

DESCRIPTORS: *Paleoecology, Magnetism, Climate, USSR.

Gabrielyan, A. G., Kotel'nikov, V. M., and Lavrent'eva, V. S.
THE CHARACTERISTICS OF CARBONIFEROUS CARBONATE RESERVOIRS IN THE STALINGRAD DISTRICT. [1961] 8p.
Order from ATS $13.30 ATS-72N55R

Trans. of #Geol[ogiya] Nefti i Gaza (USSR) 1961, v. 5, no. 3, p. 29-34.

DESCRIPTORS: *Carbonates, *Hydraulic reservoirs, Geology, USSR.

Gusakov, N. D.
DETERMINATION OF THE PRODUCTIVITY OF LOW-RESISTIVITY SANDY RESERVOIR ROCKS. [1961] 3p.
Order from ATS $5.00 ATS-39N55R

Trans. of #Geol[ogiya] Nefti i Gaza (USSR) 1961, v. 5, no. 4, p. 43-45.

DESCRIPTORS: Hydraulic reservoirs, *Rock, Petroleum, Production, Geology.

Krylov, A. Ya. and Silin, Yu. I.
THE ARGON METHOD OF AGE DETERMINATION OF CLASTIC SEDIMENTS [Primenenie Argonovogo Metoda Opredeleniya Vozrasta k Oblomochnym Osadochnym Porodam:]. 22 Nov 60, [20]p. 6 refs.
Order from OTS or SLA $1.60 61-15888

Trans. of #[Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya] 1960 [v. 25] no. 1, p. 56-66.
Another trans. is available from AGI $4.25.

DESCRIPTORS: *Clays, *Rock, Sedimentation, *Geological time, Determination, Argon, Geology.

The argon to potassium ratio (Ar^{40}/K^{40}) which corresponds to the age of the initial material, is preserved in the majority of cases in granite pebbles, arkoses, sandstones and clastic clays. This fact can be utilized for paleogeographic maps and as an additional factor for various kinds of correlation of sedimentary rocks. The single cases of investigating the kaolinite clays indicate the preservation of radiogenic argon in kaolinites, and this allows them to be used for determining the time of their formation. There is traced, in the desintegration of granites, a contradictory course of a process that lead to the alteration of the argon: potassium ratio. At the initial stages of weathering the loss in argon outstrips the loss in potassium, but at the end stages this discrepancy disappears, and the argon to potassium ratio attains again the same value as it was in the fresh rocks. The study of this phenomenon can help to understand the mechanism of crystal-disintegration through weathering. (Author)

Movmyga, G. T.
THE RECOVERY OF OIL FROM WATER-DRIVE RESERVOIRS DURING THE PERIOD OF WATER-CUT PRODUCTION. [1961] 6p.
Order from ATS $11.10 ATS-22N54R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[enii]. Neft' i Gaz (USSR) 1961, v. 4, no. 2, p. 49-55.

DESCRIPTORS: *Oils, Recovery, *Petroleum, Water.

Polyakov, G. G.
EXPERIMENTAL STUDIES OF PERFORATED CASED WELLS USING A RADIAL MODEL WITH A HOMOGENEOUS POROUS MEDIUM. [1961] 7p.
Order from ATS $8.60 ATS-53N54R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1958, v. 1, no. 10, p. 63-68.

DESCRIPTORS: *Porous materials, *Walls, *Petroleum.

Polyakov, G. V.
EXPERIMENTAL STUDIES OF THE EFFECT OF WELL PERFORATION ON INFLUX DURING LINEAR FLOW OF LIQUID. [1961] 7p.
Order from ATS $8.25 ATS-54N54R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1959, v. 2, no. 12, p. 49-54.

DESCRIPTORS: *Fluid flow, *Porous materials, Walls, *Petroleum, Water.

Shimanskii, V. N.
PALEONTOLOGICAL SECTION OF THE MOSCOW SOCIETY OF NATURALISTS IN 1960. 6 Oct 61 [5]p. JPRS: 10416.
Order from OTS or SLA $1.10 61-28597

Trans. of Paleontologicheskii Zhurnal (USSR) 1961, no. 2, p. 140-141.

DESCRIPTORS: *Paleoecology, Scientific reports, Conferences, Scientific organizations.

Shneerson, V. B.
CHANGE IN THE WETTABILITY OF OIL RESERVOIR ROCKS IN CONTACT WITH DIFFERENT GASES AT HIGH PRESSURES. [1961] 11p.
Order from ATS $15.30 ATS-71N53R

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Nefti. Trudy, 1958, v. 11, p. 283-293.

DESCRIPTORS: Geochemistry, *Rock, *Petroleum, *Porous materials.

Vlodavetz, V. I.
PASSIVE AND ACTIVE DEFENSE FROM THE CATASTROPHIC ERUPTIONS OF VOLCANOES (Passivnaya i Aktivnaya Zashchita pri Katastroficheskikh Vulkanov) tr. by M. Slessers. 1961 [33]p. 10 refs. HO Trans-110.
Order from OTS or SLA $3.60 61-28000

Trans. of [Akademiya Nauk SSSR. Kamchatskaya Vulkanqlogicheskaya Stantsiya, Klyuchi]. Byulleten' Vulkanologicheskoi Stantsii [na Kamchatke] 1959, no. 28, p. 79-91.

DESCRIPTORS: *Volcanoes, *Damage control.

A review of major volcanic eruptions in the past and present constitutes the basis for analysis of various types of volcanic activity in the world with a view to pointing out the necessary protective steps to be taken in order to lessen the disaster brought by volcanic eruptions to men and national economy the world over. (Navy Hydrographic Office abstract)

Strakhov, N. M.
FORMS OF IRON IN SEDIMENTS OF THE BLACK SEA. [1961] 8p. (1 fig. 1 drawing 1 table omitted) 2 refs.
Order from OTS or SLA $1.10 61-15874

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 118, no. 4, p. 803[-806].
Another trans. is available from CB $5.00.

DESCRIPTORS: *Black Sea, *Sedimentation, Minerals, Deposits, Hydrogen compounds, Sulfides, *Iron, Petrology, Geology.

The assumption that iron occurs in deep-water deposits of the hydrogen sulphide zone in a sulphide form only, was found to be erroneous, similarly to the hypothesis maintaining that the hydrogen sulphide contamination of benthic waters has a favorable effect on the accumulation of organic substances in the sediments, or to that advocating that carbonates of the deep-water sediments of the Black Sea are purely bacterial by origin. Deep-water deposits of the Black Sea reveal a general dependence of the contents of $Fe^{2+}_{pyr} + Fe^{2+}_{hydr}$ on the sum-total of the organic substance preserved in the sediments, and on the petrography of the deposits. Deep-water deposits of the hydrogen sulphide zone of the Black Sea scarcely differ in the overall content of Fe^{2+}_{pyr} and in the correlation of the authigenous forms of iron from petrographically analogous deposits of other sea basins, where normal oxygen conditions prevail throughout the mass of water, provided the deposits contain the same quantities of C_{org} as the deposits of the Black Sea.

Mineralogy

PROSPECTING AND DEVELOPMENT OF USEFUL MINERALS (Rozvedka i Razrabotka Poleznykh Iskopaemykh). Apr 61, 286p. 148 refs.
Order from OTS $3.50 AEC-tr-4475

Trans. of Vsesoyuznoi Nauchno-Tekhnicheskoi Konferentsii po Primeneniyu Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narodnom Khozyaistve i Nauke [no. 2] Moscow, 4-12 Apr 57. Trudy, 1958 [250]p.

DESCRIPTORS: *Geophysical prospecting, *Minerals, Radioactive isotopes, Geology, *Coal, *Boreholes, *Oils, Boron, *Rocks, *Potassium compounds, Neutrons, Absorption, Petroleum, Gases, Gamma rays, Chlorine, Water, *Underwater, Scintillation counters, Neutron counters, *Underground explosions, Mining engineering, Explosions,

Contents:
Achievements of national science and industry in using radioactive methods for prospecting and developing useful minerals
Outlook for the utilization of radioactive radiations in geology during the search and prospecting of useful minerals, by G. N. Flerov and others
Radioactive logging at coal deposits, by Yu. B. Bulashevich and others
Use of radioactive methods for the investigation of petroleum and gas boreholes, by D. M. Srebrodol'skii
Radiometric method of prospecting oil; the state and development of the method, and experience in its application, by F. A. Alekseev
Use of radioactive isotopes for the investigation of coal-test boreholes, by S. M. Zhitnikova and I. A. Savinets
Experience of the use of nuclear methods in the investigation of cross sections of boreholes being drilled for water, by V. A. Rapolova
Use of radiometric methods for geological mapping, by A. F. Kondratenko
Determination of boron content in rocks by the neutron method, by V. K. Khristianov and others
Prospecting of potassium salts by radioactive methods, by K. S. Pshevlotskii
Basic problems of the procedure of radiometry of boreholes and the state of their development, by V. M. Zaporozhets and V. V. Sulin
Problem of separate study of the processes of retardation and absorption of neutrons in rocks, by A. I. Kholin
Quantitative interpretation of data on radiometry of boreholes by Yu. A. Gulin
Utilization of neutron methods for the study of the geological cross section of boreholes, collector characteristics, and separation of gas- and petroleum-bearing layers, by F. Ts. Kron and V. P. Odinokov
Evaluation of the porosity and petroleum saturation of sand-clay collectors by the neutron gamma method from the chlorine content, by V. V. Larionov
Some problems of the procedure of radiometry of boreholes, by V. P. Ivankin
Procedure of activation analysis of rocks under borehole conditions, by Yu. S. Shimelevich
The influence of the zone of penetration of fresh filtrate of the drill mud in the layer on the results of the neutron gamma method, by Yu. V. Galuzo
Effective radius of investigation of radiometry of boreholes, by A. V. Zolotov
Study on models of the distribution of neutrons in petroleum-bearing and water-bearing collectors intersected by a borehole, by O. A. Barsukov
Theory of neutron methods of investigation of boreholes, by S. A. Kantor and A. Ya. Temkin
The problem of the use of radioactive isotopes in the petroleum industry, by A. A. Korzhev
Radiometric measurements in boreholes at high temperatures, by G. N. Strotskii
Results of the application of radioactive isotopes for the study of the boreholes of the Bashneft' Association, by A. Sh. Galyavich
Study of the dynamics of underground waters by means of radioactive isotopes, by Ya. B. Finkel'shtein
Radiometric apparatus for the investigation of petroleum and gas drill holes, by V. M. Zaporozhets

Possibilities of the application of scintillation counters for the radiometry of boreholes under conditions of high temperatures, by V. N. Mikhailovskii and Yu. I. Sitnitskii

New borehole radiometric apparatus with neutron proportional and scintillation counters, by D. F. Bespalov

The problem of the investigation of boreholes by the method of scattered γ-radiation, by E. M. Fillipov

Certain problems of the application of the method of induced activity in the determination of the position of water-petroleum contact, by E. V. Blankov

Utilization of radioactive isotopes for the study of explosions in mining, by G. I. Pokrovskii and A. A. Chernigovskii

Use of radioactive radiations for the enrichment of coals and control of their quality, by V. D. Goroshko

Radiometric method in investigations of the mechanism of beneficiation of coals, by V. D. Goroshko

Industrial experience of the control of successive pumping of petroleum products with the use of a radioactive indicator, by B. Z. Votlokhin and others.

Berger, G.
THE STRUCTURE OF MONTMORILLONITE. Provisional Rept. Concerning the Methylating of Clays and Clay Minerals. [1961] [8]p. 13 refs.
Available on loan from SLA 62-10089

Trans. of Chemisch Weekblad (Netherlands) 1941, v. 38, p. 42-43.

DESCRIPTORS: *Clay, Minerals, *Montmorillonite, Crystal structure, Exchange reaction, Methyl radicals.

Eliseev, E. N.
A STUDY OF THE CHEMICAL COMPOSITION OF THE NATURAL PYRRHOTITES. [1961] [24]p. (3 drawings omitted).
Order from OTS or SLA $2.60 61-15889

Trans. of Leningrad U. [Vestnik] (USSR) 1958 [v. 13] no. 6 [Seriya Geologii i Geografii] no. 1, p. 24-35.

DESCRIPTORS: *Pyrites, Minerals, Chemical analysis.

It was shown by means of sulfide copper-nickel ores that under the conditions of a varying concentration of sulfur in a solution there are formed not only various associations of minerals but also minerals of varying composition. The changes in the composition of pyrrhotite reflect those changes in the concentration of sulfur in ore solutions from which the ore minerals crystallized the systems: iron-copper-sulfur, iron-nickel-sulfur show plainly that the extent of the conditions which existed or prevailed at the time of the deposition of the ores is facilitated by a study of the chemical composition of the ore minerals and especially by establishing the exact composition of pyrrhotite in the various types of ores. (Author)

Eliseev, E. N. and Denisov, A. P.
X-RAY INVESTIGATION OF PYRRHOTITE. [1961] [17]p. (3 drawings 3 charts 4 tables omitted).
Order from OTS or SLA $1.60 61-15890

Trans. of Leningrad U. [Vestnik] (USSR) 1957 [v. 12] no. 18 [Seriya Geologii i Geografii] no. 3, p. 68-78.

DESCRIPTORS: *Pyrites, Minerals, X-rays.

Twenty-five samples of pyrrhotite from various sulfide deposits were subjected to X-ray investigations. Pyrrhotites with a sulfur-content of 50.20, 51.95, 52.00, 52.85, 52.94, 53.15, 53.17, 53.55, and 53.42 at. -% were subjected to chemical analyses. The values of the parameter a_o c_o, the volume of the elementary nucleus, and the ratios of c_o/a_o show that in keeping with the increase of the deficit of iron in pyrrhotite the dimensions of the elementary nucleus decrease. Especially great changes are characteristic for the axis c_o. The examined pyrrhotites comprised an almost unbroken series of solid solutions within the range of 51.96 to 54.35 at. -% S (i.e., from $Fe_{13}S_{14}$ to Fe_5S). The samples of pyrrhotite within the range of 51.96 to 54.35 at. -% S represent a ferromagnetic modification of pyrrhotite (β-pyrrhotite); the sample with 50.8 at. -% S. is paramagnetic α-pyrrhotite.

Physics of the Atmosphere

Gringauz, K. I., Bezrukikh, V. V. and others.
A STUDY OF INTERPLANETARY IONIZED GAS, HIGH-ENERGY ELECTRONS, AND CORPUSCULAR SOLAR RADIATION, USING TRI-ELECTRODE TRAPS OF CHARGED PARTICLES ON THE SECOND SOVIET COSMIC ROCKET (Izuchenie Mezhplanetnogo Ionizovannogo Gaza, Energichnykh Elektronov i Korpuskulyarnogo Izlucheniya Solntsa pri Pomoshchi Trielektrodnykh Lovushek Zaryazhennykh Chastits na Vtoroi Sovetskoi Komicheskoi Rakete). 20 Dec 61, 7p. 5 refs.
Order from STS $5.00 STS Trans. #1

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 6, p. 101-107.

DESCRIPTORS: Space flight, *Interstellar matter, Solar atmosphere, Solar rockets, *Solar energy, *Electrons.

Mityakova, E. E., Mityakov, N. A., and Rapoport, V. O.
ON THE QUESTION OF THE MEASUREMENT OF THE ELECTRON CONCENTRATION IN THE IONOSPHERE AND INTERPLANETARY SPACE. [1961] 11p. 13 refs. MDF M-143; AFCRL-568; AD-262 419.
Order from OTS or SLA $1.60 62-13627

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 6, p. 949-956.
Another translation is available from OTS or SLA $35.00 as part of 61-23558, JPRS-7372, 16 June 61 [474]p.

DESCRIPTORS: *Ionosphere, Analysis, *Electrons, Density, Measurement, Satellite vehicles

The methods of determining the electron concentration in the ionosphere by using artificial satellites, as described in the literature, are analyzed briefly. Expressions are found for the phase and group paths of a

signal emitted by the artificial satellite in a quasi-longitudinal approximation taking the sphericity of the earth into account. New methods of determining the electron concentration by measuring the angle between the polarization planes at two frequencies and also by measuring the difference in the group paths at two frequencies are discussed. It is proposed to use a combination of these two methods to measure the electron concentration of interplanetary space by using a cosmic rocket. (Author)

Zagulyaeva, V. A.
LUNAR TIDAL FLUCTUATIONS IN THE IONOSPHERE. [1961] 6p. 3 refs. MDF Z-136; AFCRL-569; AD-262 420.
Order from OTS or SLA $1.10 62-13625

Trans. of [Nauchno-Issledovatel'skii Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln]. Trudy (USSR) 1960, v. 17(27) p. 282-286.

DESCRIPTORS: *Ionosphere, *Moon, Geophysics, Harmonic analysis.

Results are presented of a calculation of lunar tidal fluctuations according to results of observations of vertical probing of ionosphere stations at Ashkhabad, Moscow, Tomsk, and Irkutsk.

ENGINEERING

THE RAISING OF SUNKEN CONCRETE ROAD SLABS BY THE COMPRESSED AIR METHOD. [1961] 8p.
Order from SLA $1.10 61-20215

Trans. from Technische Blatter (West Germany) 1956. Another trans. is available on loan from BR.

DESCRIPTORS: *Roads, Maintenance, *Compressed air, *Concrete, Fracture (Mechanics), Traffic, Safety, Particles, Sand, Girders, Foundations (Structures).

Chemical Engineering

EASTERN OIL, 1940, VOL. 2, NO. 10/11: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p. 1 ref.
Order from OTS or SLA $1.10 61-20354

Abstract trans. of Vostochnaya Neft' (USSR) 1940, v. 2, no. 10/11, p. 6-7, 27-29, 36-44.

DESCRIPTORS: *Oils, *Petroleum, Abstracting, Periodicals, Gases, Production, Sources, Vacuum furnaces, Corrosion, USSR.

Contents:
Petroleum gases to serve national economy, by Yu. I. Bokserman
Improving mud solutions and preventing loss of circulation in Syzran oil field, by P. I. Davydov and G. D. Mel'nichenko
Corrosion of furnace tubes, by N. A. Butkov and others
Novo-Stepanovo oil field, by V. F. Nezhevenko.

SIMPLE CHEMICAL PRODUCTION PROCESSES IN COMMUNIST CHINA. 24 Aug 61 [22]p. JPRS: 8775.
Order from OTS or SLA $2.60 61-27936

Trans. of Hua Hsüeh Kung Yeh (Chinese People's Republic) 1960, no. 5, p. 15, 37-39, 47 and no. 6, p. 34, 45-47.

DESCRIPTORS: *Chemical industry, *Gases, Purification, *Catalysts, Production, *Sulfuric acid, *Calcium compounds, Oxides, *Arsenic compounds, Fluorides, *Sulfur, *Copper compounds, Sulfates, *Furfurals.

Contents:
Higher baking intensity for mechanical furnace and lower gas temperature in gas purifying stage
Native production of diatomaceous earth pseudo-catalyst in small contact sulfuric acid plant, by Tung Teh-chang
Initial experiments in using lime to treat arsenic fluorine waste water in sulfuric acid production, by Lin Ch'ien
Some improvements in the concentration process of sulfur alkalies in Hsin-chi chemical plant, by Liu Tai-liu
Preparation of copper sulfate with malachite and diluted sulfuric acid
Essential experiences in increasing the yield of furfural by native methods, by Ch'ai Wen-piao and Lü Ngo-ku.

Badyshtova, K. M.
HYDROTREATING PARAFFIN FROM EASTERN HIGH-SULFUR CRUDES. [1961] 7p.
Order from ATS $9.80 ATS-20N56R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 6, p. 21-26.

DESCRIPTORS: *Petroleum, *Hydrocarbons, Water, Processing, USSR.

Bayer, Otto.
THE DIISOCYANATE POLYADDITION METHOD-POLYURETHANE (Das Di-Isocyanat-Polyadditionsverfahren (Polyurethane). [1961] [58]p. 44 refs.
Order from SLA $5.60 61-20990

Trans. of Angewandte Chemie (West Germany) 1947, v. 59, no. 9, p. 257-288.
Partial trans. available from SLA mi$3.00, ph$6.30 as 59-15888 [1959] 40p.

DESCRIPTORS: *Urethanes, Polymerization, *Cyanates, Chemical reactions, Molecular weight.

Hoff, H.
FUNDAMENTALS OF THE TREATMENT OF THE BROWN FUMES FROM THE BASIC OXYGEN PROCESS, PT. I. Sep 61, 3600 words.
Order from HB $9.80 HB-5159

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 9, p. 562-566.

DESCRIPTORS: *Waste gases, *Particles, Combustion, Reduction, *Smokes, *Oxygen, Processing, Blast furnaces, Iron industry, Steel industry,

Hoff, H.
FUNDAMENTALS OF THE TREATMENT OF THE BROWN FUMES FROM THE BASIC OXYGEN PROCESS. PART II. Oct 61, 5300 words.
Order from HB $15.90 HB-5276

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 9, p. 566-571.

DESCRIPTORS: *Oxygen, *Processing, Blast furnaces, Iron industry, Steel industry, *Particles, Combustion, *Waste gases, Boilers, Costs, *Smokes, Reduction.

Kargin, V. A., Kovarskaya, B. M. and others.
MECHANICAL MEANS OF PRODUCTION OF NEW TYPES OF POLYMERS. [1959] 7p. 21 refs.
CCT-510TT.
Order from OTS or SLA $1.10 62-15356

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1957 [no. 2] p. 77-79.

DESCRIPTORS: *Polymers, Production, Chemical engineering, Instrumentation.

A special device was constructed for obtaining block and graft polymers by mechanical means. The device is analogous to the masticator used for rolling rubbers (J. Sci. Instr. 31: 98, 1954.) The principal part of the instrument consists of two helical conveyors which represent the spirals of Archimedes, between which the wearing of 10- to 20-g samples takes place. The space between the conveyors can be regulated. The lower spiral conveyor rotates at 30 rpm; the upper one is stationary. The system is in an inert gas.

Nonnenmacher, H., Reitz, O., and Schmidt, P.
THE BASF-SCHOLVEN PROCESS FOR PRESSURE REFINING OF CRUDE BENZENE [1961] 16p. (4 figs. omitted) 9 refs.
Available on loan from SLA 62-10066

Trans. of Erdol und Kohle (West Germany) 1955, v. 8, no. 6, p. 407-411.

DESCRIPTORS: *Benzenes, Hydrogenation, Pressure, Catalysts, Catalysis, Refineries, Germany.

Tsygankov, P.
ALL-UNION INTER-VUZ CONFERENCE ON THE THEORY AND PRACTICE OF RECTIFICATION IN THE CHEMICAL AND THE FOOD INDUSTRIES [24-29 OCT 60, KIEV]. 21 Sep 61 [13]p. JPRS: 9486.
Order from OTS or SLA $1.60 61-28550

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1961, v. 4, no. 2, p. 328-332.

DESCRIPTORS: Conferences, *Chemical industry, *Food, Scientific research, Fractionation, Towers (Chemistry), Distilling plants.

Names of the speakers and their topics are given for the Conference that was held from 24 to 29 October 1960 in the Kiev Technological Institute of the Food Industry.

Zubkov, N. V.
RESULTS OF INVESTIGATIONS ON THE EFFECT OF GAS ON THE PERFORMANCE OF DOWN-HOLD PUMPS. [1961] 8p.
Order from ATS $11.65 ATS-12N56R

Trans. of Neftyanoe Khoz[yaistvo] (USSR) 1961, v. 39, no. 6, p. 57-61.

DESCRIPTORS: *Petroleum, Recovery, *Pumps, Tests, Natural gas, Gases.

Electrical and Electronic Engineering

IMPROVEMENT IN APPARATUS INDICATING THE AMPLITUDE-FREQUENCY RESPONSE OF AN ELECTRIC CIRCUIT (Perfectionnement aux Apparells Indiquant la Response Amplitude/Frequence d'un Circuit Electrique). [1961] 5p.
Order from AC $5.50

Trans. of French patent 1 108.534, by Electric & Musical Industries, 1956.

DESCRIPTORS: *Circuits, *Amplitude modulation, *Electric filters, Electrical equipment, Recording devices, Amplifiers, Frequency.

THEORY OF AUTOMATIC CONTROL. 30 Oct 61 [667]p. 299 refs. JPRS: 10975.
Order from OTS or SLA $28.50 62-13610

Trans. of mono. Trudy Vtorogo Vsesoyuznogo Soveshchaniya po Teorii Avtomaticheskogo Regulirovaniya (All-Union Conference on the Theory of Automatic Control (no. 2). Proceedings) Moscow/Leningrad, 1955.

DESCRIPTORS: Automatic, *Control systems, Theory, Synthesis, Numerical methods and procedures.

Contents:
I. Survey of the methods of solving the problems of quality and dynamic accuracy in the theory of automatic control
II. Methods for constructing transients in automatic control systems
III. The analysis of the quality and methods of choice of the parameters of automatic control systems
IV. Methods of synthesis of corrective devices

V. Some problems in the construction of optimal automatic control systems
VI. Some problems of analysis and calculation of systems of intermittent control and of systems with variable and non-linear parameters
VII. Analysis and synthesis of systems of automatic control with continuously variable inputs
VIII. Problems of the use and development of modern methods of analysis and calculation of automatic control systems.

Al'bitskaya, O. N. and Shaposhnikova, N. A.
INVESTIGATION OF THE FUNGUS RESISTANCE OF ELECTRICAL INSULATION MATERIALS. [1961] 8p.
Order from ATS $14.00 ATS-67N56R

Trans. of Vestnik Elektropromy[shlennosti] (USSR) 1959, v. 30, no. 10, p. 54-59.

DESCRIPTORS: *Electric insulation, Fungusproofing.

Chistyakov, N. I., ed.
TRANSISTOR ELECTRONICS IN INSTRUMENT TECHNOLOGY. Oct 61, 370p.
Order from PP $15.00

Trans. of mono. [Primenenie Poluprovodnikov v Priborostroenii. Trudy Konferentsii, Moscow, 1958, 258p.].

DESCRIPTORS: *Transistors, Semiconductors, *Amplifiers, *Oscillators, *Circiuts, Servo systems, Instrumentation.

Crafoord, A. H. Erik and others.
PROCESS OF MANUFACTURING LIQUID FILLED TETRAHEDRAL ENVELOPES (Fremgangsmate ved Fremstilling af Vaskefylte Tetraeder Formete Pakninger). [1961] 6p.
Order from AC $5.00

Trans. of Norwegian patent 89 488 (54).

DESCRIPTORS: *Containers, Seals, *Liquids, Packaging, Manufacturing methods.

Kuznetsov, P. I., Stratonovich, R. L. and Tikhonov, V. I.
ON THE ACTION OF ELECTRIC FLUCTUATIONS ON A TUBE OSCILLATOR [O Vozdeistvii Elektricheskikh Fluktuastii na Lampovyi Generator]. [1961] 6p. 4 refs. MDF K-159.
Order from OTS or SLA $1.10 62-15204

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 97, no. 4, p. 639-642.

DESCRIPTORS: *Electron tube oscillators, Oscillators, *Oscillation, Mathematical analysis, Generators

The behavior of a tube oscillator under the action of electric fluctuations which are slowly-varying functions relative to the natural self-oscillations of the oscillator itself, which would occur if there were no fluctuations, is considered based on the application of the generalized Einstein-Fokker equation. A set of linear equations (in general, an infinite set) is obtained which can be solved by any approximate method.

Meerov, M. V.
INTRODUCTION TO THE DYNAMICS OF AUTOMATIC REGULATING OF ELECTRICAL MACHINES, tr. by J. S. Shapiro. 1961, approx. 430p.
Order from Butterworth, Inc., 7235 Wisconsin Ave., Washington 14, D. C. $18.75

Trans. of unidentified Russian mono., Academy of Sciences of the USSR, 1956.

DESCRIPTORS: Dynamics, Automatic, *Current regulators, *Electric machinery, Machines, Electrical equipment, Time lag theory, *Control systems, Design, *Linear systems, Theory, Electrical networks, *Non-linear systems, Stability.

Mesyatsev, P. P.
APPLICATION OF PROBABILITY THEORY AND MATHEMATICAL STATISTICS IN THE DESIGN AND MANUFACTURE OF RADIO-ELECTRONIC EQUIPMENT, tr. by L. Ebner. [Dec 61] 250p. 10 refs. PL-480 Comm.
Order from OTS $2.50 60-51086

Trans. of mono. Primenenie Teorii Veroyatnostei i Matematicheskoi Statistiki pri Konstruirovanii i Proizvodstve Radioapparatury, Moscow, 1958 [262]p.

DESCRIPTORS: Electronic equipment, *Radio equipment, Design, Production, *Statistical processes, *Probability, Statistical functions, Statistical distribution, Errors, Theory, Applied mathematics

Contents:
Fundamental propositions of probability theory and examples of their use in radio equipment manufacture
Formulas of the theory of probability, and examples
Distribution functions of random variables and examples
Error formulas for multivariate distribution functions of random variables, and examples
Correlated distribution functions of random variables and their use in the manufacture of radio equipment
On the possible use of probability theory and mathematical statistics in the design and manufacture of radio equipment

Mukutmoni, Tapas.
MEASUREMENT OF CORONA DISCHARGES IN HIGH-VOLTAGE SWITCHGEAR AND INSULATORS. [1961] 20p. 7 refs.
Order from SLA $1.60 61-20876

Trans. of Siemens Zeitschrift (West Germany) 1959 [v. 33] no. 8, p. 509-516.

DESCRIPTORS: Transmission lines, Voltage, *Electric switches, Switches, *Electric insulation, *Electrical corona, *Electric discharges, Radio interference, Measurement, High frequency

The interference effect of a charging spark is greater than that of predischarges or impact ionization by a

certain multiple. Rain, dew and dirt increase the interference voltage produced in insulators by a substantial amount. (Author)

Nürnberg, W.
EVALUATION OF THE RESULTS OF ELECTRICAL MEASUREMENTS ON A GEARED BLOOMING-SLABBING MILL WITH CURRENT CONVERTER FEED AND FIELD REVERSAL CONTROL, PTS. I AND II. Sep 61.
Order from BISI £5 10s ea. BISI-2253

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 [no. 9] p. 579-589 and [no. 10] p. 661-669.

DESCRIPTORS: *Rolling mills, Gears, *Power drives, Acceleration, *Electric motors, Operation, *Armatures, Mathematical analysis, Circuits, *Electric fields, Measurement, Electromechanical converter.

Pokonov, N. Z.
NEW AUTOMATIC ELECTRIC DRIVE FOR COMPRESSOR STATIONS. [1961] 5p.
Order from ATS $8.30 ATS-86N55R

Trans. of Gazovaya Prom[yshlennost'] (USSR) 1958, v. 3, no. 11, p. 43-46.

DESCRIPTORS: *Compressors, Automatic, Electrical equipment.

Robieux, J.
EFFECT OF MANUFACTURING PRECISION ON THE PERFORMANCE OF AN ANTENNA. [1961] 41p.
Order from ATS $49.65 ATS-30N55F

Trans. of Annales de Radioélectricité (France) 1956, v. 11, no. 43, p. 29-56.

DESCRIPTORS: *Antennas, Sensitivity, Manufacturing methods, *Precision finishing.

Tikhodeev, G. M.
CURRENT ASYMMETRY IN A-C ARCS BETWEEN ELECTRODES OF DISSIMILAR CURRENT-CONDUCTING MATERIALS. Aug 61, 3600 words.
Order from HB $9.80 HB-5176

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvest[iya] 1951, no. 12, p. 1777-1785.

DESCRIPTORS: *Electrodes, *Semiconductors, Conductivity, *Arc welding, Tungsten, Carbon, Electrodes, *Electric arcs, Electric discharges, Alternating current.

Ulbrich, E. and Piloty, H.
THE DESIGN OF ALL-PASS, LOW-PASS, AND BAND-PASS NETWORKS WITH A CONSTANT GROUP DELAY WHICH IS APPROXIMATED IN THE TSCHEBYCHEFF SENSE. [1961] 33p.
Order from ATS $35.45 ATS-02N54G

Trans. of Arch[iv der] Elektr[ischen] Übertr[agung] (West Germany) 1960, v. 14, no. 10, p. 451-467.

DESCRIPTORS: *Electrical networks, Design.

Vendik, O. G.
ON THE CURRENT DISTRIBUTION IN AN ANTENNA WITH NONMECHANICAL BEAM SCANNING. [1961] 17p. 8 refs. MDF V-157; AFCRL-512; AD-262 520.
Order from OTS or SLA $1.60 62-13621

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiotekh[nika] (USSR) 1961, v. 4, no. 1, p. 64-76.

DESCRIPTORS: *Antennas, Electric currents, Distribution

The singularities are considered of the radiating current distribution in an antenna whose principal maximum of the directivity pattern must move nonmechanically in a prescribed sector. A relation in general form is established between the number of linearly-independent current components and the ratio of the scanning sector to the width of the main beam of the antenna. (Author)

Watanabe, Hitoshi.
TCHEBYCHEFF APPROXIMATION THEORY OF FILTER NETWORKS. [1961] 15p. 10 refs.
Order from SLA $1.60 61-20548

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1960, v. 43, no. 3, p. 271-280.
Another trans. is available from ATS $26.75 as ATS-02N53J [1961] 15p.

DESCRIPTORS: *Microwave networks, *Bandpass filters, Numerical analysis, Theory.

Results of a systematic investigation of the Tchebycheff approximation filter design theory for a given prescribed frequency region are discussed. A function with the most ideal attenuation characteristic for the above-mentioned filter is defined as the ideal attenuation function. This ideal attenuation function is obtained by using an Abelian integral. The generalized characteristic function is derived by mapping the ideal attenuation function. A method is discussed for obtaining a realizable transfer coefficient from the generalized characteristic function. In particular the design method of a Tchebycheff passband characteristic filter with one or two passbands is discussed in detail. Two or three interesting design examples and network configurations are given. (Author)

Ordnance, Missiles, and Satellite Vehicles

Raushenbakh, B. V. and Tokar', E. N.
CERTAIN PROBLEMS OF GUIDANCE IN INTERPLANETARY SPACE, tr. by B. W. Kuvshinoff. 24 Aug 61, 17p. APL/JHU TG 230-T 231.
Order from OTS $0.50 61-31628

Trans. of Iskustvennye Sputniki Zemli (USSR) 1960, v. 5, p. 41-53.

DESCRIPTORS: *Guidance, *Space flight, Spaceships, Vortices, Gyroscopes, Space navigation, *Guided missiles, *Celestial guidance.

Rotation of a vehicle about its center of mass and maintenance of a given orientation is analyzed.

Sarychev, V. A.
EFFECT OF THE EARTH'S CONTRACTION ON THE ROTATIONAL MOTION OF AN ARTIFICIAL SATELLITE (Vliyanie Iskusstvennogo Sputnika).
15 Dec 61, 8p. 4 refs.
Order from STS $6.60 STS Trans #2

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 6, p. 3-10.

DESCRIPTORS: *Satellites, Motion, *Earth, Rotation,

Sanitation and Safety Engineering

Dikker, G. L.
THE CONCENTRATION AND SIZES OF TOBACCO SMOKE PARTICLES: [REVIEW OF ARTICLE BY G. LANGER AND M. FISHER]. [1961] 7p.
Order from SLA $1.10 61-10895

Trans. of Tabak SSSR, 1957, v. 18, no. 1, p. 61-63 (original pub. in A. M. A. Archives of Industrial Health (U. S.) 1956, v. 13, no. 4 [p. 372-378]).

DESCRIPTORS: *Tobacco, *Smokes, *Cigarettes, Particles, Measurement.

Supron, L. F. and Zverev, F. P.
MEDICAL AND CIVIL DEFENSE IN TOTAL WAR, tr. by M. Roublev. 1961, 406p. 274 refs. PL-480 HEW.
Order from OTS $4.25 60-21171

Trans. of mono. Meditsinskoe Obespechenie Naseleniya v Usloviyakh Primeneniya Sredstv Massovogo Porazheniya, Minsk, 1959 [400p.].

DESCRIPTORS: *Aerial warfare, *Civil defense systems, *Weapons, *Radiological warfare, *Radiation effects, *Toxicology, Therapy, *Chemical warfare agents, *Medical personnel, *Air defense command, Warfare, Strategic air command, Aircraft defense systems, Military organizations, *Nuclear weapons, Radiation damage, *Radiation sickness.

Contents:
Modern methods of air attack and general principles of civil defense
The physical principles of atomic weapons and their destructive properties
Radiation sickness
The toxicology, clinical aspects and therapy of affections caused by war gases
Principles of organization of civil defense
Principles of organization, tasks and structure of the medical service of the MPVO
Principles of protection against modern weapons of mass destruction
Role of the MS MPVO in the protection from radiological damage caused by nuclear weapons.

Zdrovskii, P. F., ed.
PROBLEMS OF ANTI-BACTERIOLOGICAL DEFENSE: ACCORDING TO DATA FROM FOREIGN LITERATURE. 1 Oct 61 [333]p. 568 refs. JPRS: 10256.
Order from OTS or SLA $19.75 61-28724

Trans. of mono. Voprosy Protivo-Bakteriologicheskoi Zashchity, Moscow, 1960, 320p.

DESCRIPTORS: History, *Weapons, *Biological warfare, Selection, *Civilian defense systems, Infections, Diseases, Disinfectants, Detection, *Immunization, Training, *Biological warheads, *Safety, Sanitary engineering, *Decontamination, *Vaccines, Pneumonia, plague, Equine encephalomyelitis, Q fever, Spotted fever, Smallpox, Cholera, Virus pneumonia, Botulism, Yellow fever, Meningitis, Contamination

Contents:
Brief historical sketch, by V. A. Lebedinskii
Information on the bacteriological weapon, by K. G. Gapochko and others
Some problems in the mass procurement of biological agents, by A. I. Filippenko
Principles of selection and possible agents of bacteriological warfare, by N. S. Garin
Basic means of anti-bacteriological defense
Organization of anti-bacteriological civil defense in the United States of America, by K. G. Gapochko
Principles of detecting the biological infectious agents, by V. A. Lebedinskii
Individual protection against the bacteriological weapon, by P. N. Burgasov and K. G. Gapochko
Means of individual and collective non-specific defense, by A. I. Filippenko
Several modern means and methods of disinfection, by A. I. Filippenko
Organization of anti-bacteriological defense measures, by K. G. Gapochko

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Clement, G.
DETERMINATION OF LIPIDS IN FOOD PRODUCTS; CONSIDERATIONS OF THEIR NUTRITIVE VALUE. [1961] 27p. 41 refs.
Order from SLA $2.60 61-20442

Trans. of Annales de Zootechnie (France) 1956 [v. 5] p. 237-253.

DESCRIPTORS: Nutrition, *Lipoproteins, *Lipids, Fats, *Fatty acids, *Ultraviolet spectrophotometers, *Quantitative analysis, Metabolism, Oils, *Rancidity, Tissues (Biology).

(See also 61-20731)

Kozenko, E. M.
THE AMOUNT OF STABLE ESTERS OF CARBONIC ACID PRESENT IN WINE. [1961] 4p.
Order from ATS $6.80 ATS-76N54R

Trans. of Vinodelie i Vinogradarstvo SSSR, 1952, v. 12, no. 4, p. 25-28.

DESCRIPTORS: Carbonic acids, Esters, Determination, *Wines, Beverages, Alcohols, Chemical analysis.

Lomanova, M. M.
CLARIFYING POWERS OF ACTIVE HOME FABRICATED CHARCOALS. [1961] 5p.
Order from OTS or SLA $1.10 61-18698

Trans. of Sakharnaya Promyshlennost' (USSR) 1961, v. 35 [no. 3] p. 16-18.

DESCRIPTORS: *Charcoal, *Carbohydrates, Processing.

The possibility was confirmed of using active charcoal for clarification of syrups.

Merzhanyan, A. A.
THE BEHAVIOR OF DIETHYL PYROCARBONATE IN SPARKLING AND CARBONATED WINES. [1961] 5p.
Order from ATS $7.00 ATS-75N54R

Trans. of Vinodelie i Vinogradarstvo SSSR, 1951, v. 11, no. 3, p. 19-22.

DESCRIPTORS: *Carbonates, Ethyl radicals, *Wines, Beverages, Alcohols.

Mossdorf, R.
ON THE CAUSES OF ALTERATIONS, ESPECIALLY CORROSION, OF CANNED FOOD CONTAINERS AND A METHOD OF REPRESENTATION THEREOF. Dec 61.
Order from BISI £3 BISI-2209

Trans. of Fleischwirtschaft (Germany) 1960, v. 12, June, p. 443-446.

DESCRIPTORS: *Food, *Containers, Corrosion inhibition, *Meat.

Parfent'ev, L. N. and Kovalenko, V. I.
A NOTE ON THE PROBLEM OF THE THEORY OF CHAMPAGNIZING. [1961] 2p.
Order from ATS $3.00 ATS-77N54R

Trans. of Vinodelie i Vinogradarstvo SSSR, 1952, v. 12, no. 4, p. 28-29.

DESCRIPTORS: *Wines, Processing, Theory, Alcohols, Beverages.

Parfent'ev, L. N. and Kovalenko, V. I.
THE POSSIBLE ROLE OF PYROCARBONATE ESTERS IN THE FORMATION OF CHAMPAGNE PROPERTIES IN SPARKLING WINES. [1961] 6p.
Order from ATS $10.45 ATS-74N54R

Trans. of Vinodelie i Vinogradarstvo SSSR, 1951, v. 11, no. 3, p. 16-19.

DESCRIPTORS: *Carbonates, *Esters, Ethyl radicals, *Wines, Processing, Alcohols, Beverages.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

AGITATOR FOR A TREATMENT MEDIUM (Appareil Agitateur pour un Milieu de Traitement). [1961] 14p.
Order from AC $13.50

Trans. of French patent 1 211 577, by Rolls Razor [pub. 1960].

DESCRIPTORS: *Stirrers, *Washing machines.

Begagoen, I. A.
CONTROLLED-POROSITY CHROMIUM PLATING OF ROCK-DRILLING MACHINE PARTS. Nov 61, 1100 words.
Order from HB $3.75 HB-5370

Trans. of #Vestnik Mashinostroeniya (USSR) 1961, v. 41, no. 9, p. 63-64.

DESCRIPTORS: *Drilling machines, *Chromium plating, Porosity, Rock, Machines.

Berg, G. F.
ELECTRO-HYDRAULIC REMOTE CONTROLS AND THEIR SEQUENCE REGULATORS. [1961] 35p.
Order from STT $25.00 STT-154-316

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 9, p. 465-477.

DESCRIPTORS: *Control systems, *Electrical equipment, *Remote control systems, Hydraulic systems.

Liebe, F.
EFFICIENCY OF SLIM TAPERED DIFFUSERS IN TORSIONAL FLOW. [1961] 26p.
Order from STT $18.00 STT-154-299

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 8, p. 405-412.

DESCRIPTORS: *Diffusers, Design.

Engines and Propulsion Systems

Beyer, U. and Mammitzsch, H.
DIESEL ENGINES AT THE LEIPZIG SPRING FAIR 1960. [1961] 15p.
Order from STT $8.00 STT-149-310

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 7, p. 366-371.

DESCRIPTORS: *Diesel engines, Germany.

Bohme, K.
THE STATE OF DEVELOPMENT IN THE CONSTRUCTION OF DIESEL ENGINES IN THE GERMAN DEMOCRATIC REPUBLIC. [1961] 23p.
Order from STT $10.00 STT-149-321

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 12, p. 611-617.

DESCRIPTORS: *Diesel engines, Construction

Förster, Hans Joachim.
FÖTTINGER CONVERTERS AND COUPLINGS FOR MOTOR VEHICLES (Föttinger-Wandler und -Kupplungen für Kraftfahrzeug). [1961] [106]p. 53 refs.
Order from SLA $9.10 61-20040

Trans. of Automobil Industrie (West Germany) 1960, v. 8, Apr, p. 53-83

DESCRIPTORS: *Vehicles, *Passenger vehicles, Internal combustion engines, *Transmissions, Transmission gears, *Motor generators, *Couplings, Transportation, *Automatic transmissions, Design, Tests.

A survey.

Garibaldi, Guiseppe.
MUFFLER FOR INTERNAL COMBUSTION ENGINES (Silenziatore per Motori a Combustione Interna). [1961], 4p.
Order from AC $4.00

Trans. of Italian patent 470.904 [1953?].

DESCRIPTORS: *Internal combustion engines, *Engine mufflers, Design.

Machine Parts and Mechanisms

Haakonson, Abders.
BRAKE DEVICE WORKING ON THE FLUID BRAKE PRINCIPLE (Bremseanordning Som Arbejder i Overensstemmelse med Vadskebremseprincippet). [1961] 5p.
Order from AC $4.75

Trans. of Norwegian patent 44.909/26-58.

DESCRIPTORS: *Hydraulic brakes, *Seals.

Kaufmann, F. and Janiche, W.
COMPARISON OF FATIGUE STRENGTHS OF STEEL BOLTS AND STUDS FITTED WITH STEEL OR MG-ALLOY NUTS. [1961] 5p. 11 refs.
Order from SLA $1.10 61-18879

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (Germany) 1941, v. 85, no. 22, p. 504-505.

DESCRIPTORS: *Fatigue (Mechanics), *Steel, *Bolts, *Nuts (Mechanics), *Studs, *Magnesium alloys.

Kubinek, M.
A CONTRIBUTION TO THE PROBLEM OF RUNNING NOISE PRODUCED BY ANTI-FRICTION OR ROLLER BEARINGS. [1961] 17p.
Order from STT $10.00 STT-145-291

Trans. of Strojirenstvi (Czechoslovakia) 1960, v. 10, no. 12, p. 927-932.

DESCRIPTORS: *Roller bearings, Friction, *Noise, Production, Bearings.

Manufacturing Equipment and Processes

REMARKS ON IMMERSION PYROMETRY FOR CAST IRON. PROTECTIVE SHEATHS: CONTINUOUS AND DISCONTINUOUS MEASUREMENTS [AND] PRECISION OF PLATINUM-RHODIUM PLATINUM THERMOCOUPLES (Remarques sur la Pyrométrie par Immersion pour la Fonte. Gaines de Protection: Mesures Continues et Discontinues. Précision des Couples Platine-Platine Rhodie). [1961] [13]p. (foreign text included) 1 ref.
Order from SLA $1.60 61-20831

Trans. of Fonderie (France) 1960, no. 172, p. 206-209.

DESCRIPTORS: *Cast iron, *Thermocouples, *Pyrometers, Cupola furnaces, Instrumentation, *Platinum alloys, *Rhodium alloys, Chemical analysis, Thermodynamics, Foundries

Aeslund, Nils.
OPTIMAL CONTROL. [1961] 23p.
Order from STT $20.00 STT-185-664

Trans. of Teknisk Tidskrift (Sweden) 1961 [v. 91] no. 19, p. 529-536.

DESCRIPTORS: *Automation, Control.

Kruger, Helmut.
AUTOMATION OF A 1120 BLOOMING MILL INCLUDING THE PIT HEATING FURNACE INSTALLATION BY MEANS OF PUNCH CARDS. [1961] 29p.
Order from STT $15.00 STT-146-296

Trans. from Neue Hütte (East Germany) 1960, v. 5, no. 12,

DESCRIPTORS: *Automation, *Rolling mills, Punched cards methods, Furnaces, Heating.

Matsiuk, L. N., Reitlinger, S. A., and Kolobkov, J. M.
WELDING OF POLYETHYLENE FILMS BY MEANS OF A GASEOUS HEAT CARRIER. [1961] 11p.
Order from STT $5.00 STT-146-121

Trans. from #Svarochnoe Proizvodstvo (USSR) 1960, no. 11.

DESCRIPTORS: *Welding, Polymers, *Ethylenes, *Films.

Piwowar, St.
TECHNOLOGICAL DETAILS OF ELECTRON BEAM WELDING [Technologische Besonderheitem beim Elektronenstrahlschweissen]. [1961] [3]p. 1 ref.
Order from SLA $1.10 61-10867

Trans. of Schweissen u[nd] Schneiden (West Germany) 1960 [v. 12, no. 10] p. 457-458.

DESCRIPTORS: *Electron beams, Focusing, Electrostatics, *Electric welding, Electronic equipment, Zone melting, Titanium, Manufacturing methods

Experiments showed that the size of the melting zone can be controlled within wide limits through the application of electrostatic focusing by adjustment of the distance between the edge of the focusing cathode shield and the cathode spiral. (Author)

Pribyl, J.
A CONTRIBUTION OF THE TERMINOLOGY, AND TO THE EXPLANATION, OF INHOMOGENEITY IN CAST BODIES. Aug 61.
Order from MT £8 8s MT Trans-83

Trans. of Vysoka Skola Banska. Sbornik Vedeckych Praci (Czechoslovakia) 1959, v. 5, no. 3, p. 249-261.

DESCRIPTORS: Subject headings, *Castings, Czechoslovakia.

Zeunert, F.
PRESENT STAGE OF DEVELOPMENT OF COLD PILGERING (REDUCING) PROCESS FOR MANUFACTURE OF QUALITY TUBES. Nov 61.
Order from BISI £ 3 15s BISI-2478

Trans. of Z[eitschrift fur] Metallk[unde] (West Germany) 1961, v. 52 [no. 3] p. 152-157.

DESCRIPTORS: *Steel tubing, Manufacturing methods, Pipes.

Zollikofer, E.
A NEW PROCESS FOR THE PRODUCTION OF POWDERED PRODUCTS. [1961] 5p.
Order from ATS $6.90 ATS-70N54G

Trans. from Neue Zürcher Z[ei]t[un]g (Switzerland) 1961, no. 2536(98) noon ed., p. 9.

DESCRIPTORS: *Powders, Processing.

Transport, Traction and Hoist Facilities

Dupuis, Heinrich, Preuschen, Reinhardt, and Schulte, Bernhard.
THE COORDINATION OF ALL CONTROL MECHANISMS WITH REGARD TO EASE OF OPERATION (Die Grifftechnische Zuordnung aller Bedientiele Zueinander). [1961] [20]p.
Order from SLA $1.60 61-20424

Trans. of Landarbeit und Technik (West Germany) 1955, no. 20, p. 135-147.

DESCRIPTORS: *Tractors, Operation, Control, *Control systems

Klein, Rudolf and Wegner, Udo.
MODERN IDEAS ON TRACKLAYING USING J-FLEX AND T-FLEX SPRING SPIKES. [1958] [13]p.
Order from SLA $1.60 61-16217

Trans. of [ETR] Eisenbahntechnische Rundschau (West Germany) 1957, no. 7, p. 266-273.

DESCRIPTORS: *Railroad tracks, Steel, Heat treatment, Elasticity, Damping, Friction, Load distribution, *Studs, *Connecting rods, Springs, Design.

J-Flex and T-Flex spring spikes represent the fulfilment of a plan to provide a firm connection between rail and sleeper with adequate elasticity and damping ability and little bulk, the load causing changes in shape with a minimal wear, which being calculated accurately to meet the requirements, will give a long life. In J-Flex and T-Flex spring spikes all scientific and practical knowledge available today has been made use of. This covers not only the stress conditions with a dynamic load, bearing in mind the importance of lasting strength, but also shaping, heat treatment and surface finish of the high grade spring steel. It is therefore expected with confidence that they signify true technical progress in the railway field, particularly as regards fastening rails to sleepers. It may be assumed, in view of the high-grade character of the spikes, that they bring not only considerable relative advantages, but also noteworthy absolute advantages from a technical and economic point of view. (Author)

MATERIALS

Carlsen, Helmuth W.
THE TRANSPORT OF BULK CEMENT IN SPECIAL BAGS. [1961] [8]p.
Available on loan from SLA 61-20473

Trans. of Cement och Betong (Sweden) 1948 [v. 23, no. 3, p. 114-119]

DESCRIPTORS: *Transportation, *Cements, *Containers, Packaging, Cotton textiles, Tests, Materials, Moistureproofing.

Freyssinet, Eugen.
THE BIRTH OF PRESTRESSING. [1961] 38p. [figs. omitted]
Order from SLA $3.60 61-20517

Trans. of Travaux (France) 1954, v. 38, June, p. 463-474.

DESCRIPTORS: *Reinforced concrete, Reinforcing steel, Reinforcing materials, Stresses, Construction, Elasticity, Concrete.

Fritsch, Josef.
DECOMPOSITION AND SUITABILITY TEST OF VIBRATED CONCRETE. [1961] 11p. 1 ref.
Order from SLA $1.60 61-20212

Trans. from Österreichische Bauzeitschrift (Austria) 1948, v. 3, no. 1/3.

DESCRIPTORS: Decomposition, *Concrete, *Vibration, *Cements, Test methods, Water, Separation, Stresses.

Henglein, Ernst.
HIGH TEMPERATURE MODIFICATIONS OF LITHIUM ALUMINUM SILICATES. 23 Nov 56, 5p. (4 figs. omitted) 5 refs.
Order from SLA $1.10 61-20719

Trans. of unidentified German language article from an unidentified source, July 56.

DESCRIPTORS: *Lithium compounds, *Aluminum compounds, *Silicates, Heat treatment, Physical properties, Crystal structure, Temperature.

Idorn, G. M.
THE HISTORY OF CONCRETE TECHNOLOGY: THROUGH A MICROSCOPE. [1961] 12p. (17 figs. omitted).
Order from SLA $1.60 61-18778

Trans. of Beton-Teknik (Denmark) 1959, v. 25, no. 4, p. 119-141.

DESCRIPTORS: *Concrete, Industrial production, Microstructure, Civil engineering, History, Materials, *Microscopes.

Fuels, Lubricants and Hydraulic Fluids

Dadayan, G. T., Ol'kov, P. L. and others.
EXPERIMENTAL LOW-TEMPERATURE DEWAXING OF OILS USING METHYL ETHYL KETONE. [1961] 7p.
Order from ATS $8.40 ATS-19N56R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 6, p. 17-21.

DESCRIPTORS: *Oils, Purification, *Waxes, Separation, Methyl radicals, Ethyl radicals, Ketones.

Dzhuvarly, Ch. M. and Mikharskaya, L. A.
INVESTIGATION OF TRANSFORMER OIL STABILITY. [1961] 5p.
Order from ATS $7.25 ATS-86N54R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 4, p. 64-67.

DESCRIPTORS: Transformers, *Oils, Stability.

Gerasimenko, N. M., Yastrebov, G. I. and others.
LUBE OIL HYDROTREATING. [1961] 5p.
Order from ATS $7.50 ATS-87N54R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 4, p. 27-31.

DESCRIPTORS: *Lubrication, *Oils, Processing.

Neuberger, F.
IMPROVING THE WEAR RESISTANCE OF DIES BY TREATMENT WITH COLLOIDAL GRAPHITE. [1961] [10]p. 5 refs.
Order from SLA $1.10 61-20608

Trans. of [Fertigungstechnik und Betrieb] (West Germany) 1956, v. 6, no. 7, p. 321-323.
Another trans. is available from BISI £3 as BISI-1279 [1959].

DESCRIPTORS: *Graphite compounds, *Dies, Lubrication, Forging, Machine tools, Friction, Abrasion, Resistance.

Osipov, L. N., Fersht, I. Ya. and others.
HYDROTREATING DIESEL FUEL DISTILLATE WITH HYDROGEN CONTAINING CARBON MONOXIDE AND CARBON DIOXIDE IMPURITIES. [1961] 4p.
Order from ATS $5.75 ATS-76N56R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 5, p. 15-17.

DESCRIPTORS: *Fuels, Processing, *Fuel oil, Hydrogen, Carbon compounds, *Monoxides, *Carbon dioxide, Impurities, Diesel engines.

Rogov, S. P., Danilevich, A. F. and others.
LUBE OIL HYDROTREATING. [1961] 5p.
Order from ATS $7.75 ATS-88N54R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 4, p. 23-27.

DESCRIPTORS: *Lubrication, *Oils, Processing.

Sanna, D.
TECHNICAL AND ECONOMIC INTEREST OF FERROUS ADDITIONS TO THE COKE MIX (WITH DISC.). Nov 61.
Order from BISI £2 BISI-2215

Trans. of Centre [de] Doc[umentation] Sider[urgique]. Circ[ulaire d'Informations Techniques] (France) 1959, v. 16, Dec, p. 2583-2587.

DESCRIPTORS: *Coke, Additives,

Zhemchuzhnikov, I. A. and Ginzburg, A. I.
DISTRIBUTION AND PREDICTION OF THE COKING-CAPACITY OF TYPES OF COAL BY PETROGRAPHIC CHARACTERISTICS. 12 May 61, 23p. (1 illus. 5 tables omitted).
Order from OTS or SLA $2.60 61-19930

Trans. of mono. Principles of Coal Petrology, Moscow, 1960, p. 272-283.

DESCRIPTORS: *Coal, Physical properties, Chemical properties, Petrology, Plasticity, *Coke, Production.

The coking-capacity of coal is a complicated physical-chemical property which depends upon many factors. The basic factors which determine the coking-capacity as well as the other physical and chemical properties are the petrographic composition, the degree of coalification and the percentage of ash. (Author)

Leather and Textiles

Bauer.
THE QUESTION OF SAVING CHEMICALS IN THE VISCOSE SPINNING PROCESS. [1961] 22p.
Order from SLA $2.60 61-20181

Trans. of Wirtschaftprüfer (Germany) 1940, no. 54, p. 53-62.

DESCRIPTORS: *Cellulose, Cellulose chemistry, *Textile industry, Economics, Manufacturing methods, Desulfurization, Sulfides, Sulfites, Rayon fibers, *Synthetic fibers, Electrolysis, Chemical reactions.

Gurvich, L. G.
DEPENDENCE OF THE TENSILE STRENGTH OF POLYMER FIBERS ON THE CHARACTER OF THE MOLECULAR WEIGHT. [1961] 4p.
Order from ATS $5.50 ATS-52N56R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 7, p. 1062-1064.

DESCRIPTORS: *Polymers, *Fibers, Tensile properties, Molecular weight.

Kirchberg, H.
AN IMPROVED METHOD FOR THE PREPARATION OF THIN MICROTOME SECTIONS FROM FIBERS, YARNS, AND FABRIC. [1961] 6p.
Order from ATS $10.00 ATS-25N54G

Trans. of Melliand Textilber[ichte] (West Germany) 1960, v. 41, no. 9, p. 1067-1069.

DESCRIPTORS: *Microtomes, Preparation, *Threads, Textiles.

Möhring, Albert and Duve, Günter.
ROD BIREFRINGENCE OF POLYACRYLONITRILE FIBERS. [1961] [15]p. 12 refs.
Order from SLA $1.60 61-20632

Trans. of Faserforschung und Textiltechnik (Germany) 1960, v. 11, no. 12, p. 583-590.

DESCRIPTORS: *Acrylonitriles, *Polymers, *Synthetic fibers, Permeability, Liquids, Chemical properties, Light, *Refractive index, Moisture content, Porosity, Adsorption, Temperature, Rods, Mathematical analysis, *Textile industry.

A rod birefringence could be clearly proved in wet-spun PAN fibers in the spin-moistened state and after drying at room temperature. These fibers, which have a good permeability and which exhibit no, or only very weak, swelling in most known imbibition media, have a negative intrinsic birefringence. It was possible to plot a smooth and complete rod-birefringence curve with this fiber. Liquids of the most varied chemical constitution were utilized for the plotting of this curve. This brought out the probability that aromatic compounds exhibit positive adsorption birefringence upon imbibition in PAN fibers. In contrast to the fiber which is spin-moist and dried at room temperature, the fiber dried at higher temperature possesses no rod birefringence. From this it is concluded that the pores--which at least in one direction are small compared to the wave length of light (a lower limit is not given by the Wiener theory)--existing in the spin-moist fiber and in that dried at room temperature, disappear due to drying at higher temperature. The commercial products of the DDR, "Wolcrylon" (Type IV) and "Prelana", behave like the fibers dried at higher temperature. (Author)

Paints and Finishes

Borisenko, A. I.
THIN LAMELLAR SILICATE COATING OBTAINED FROM SOLUTIONS. [1961] [5]p. (6 refs. 1 table omitted) 5 refs.
Available on loan from SLA 62-10260

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, [v. 119] no. 2, p. 339-[341].
Another trans. is available from CB $5.00

DESCRIPTORS: Thin films, *Silicates, *Coatings, Preparation, Films

Zwicky, H.
EFFECT OF SOLVENT COMPOSITION ON THE VISCOSITY OF ALKYD-MELAMINE PAINTS. 1961, 400 words.
Order from TTIS $3.00 TTIS-2341

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1961, v. 27, p. 388-389.

DESCRIPTORS: *Paints, Viscosity, *Organic solvents, Alkyd resins, Melamine.

Photographic Materials

Bogomolov, K. S., Ruditskaya, I. A. and others.
HYPERSENSITIZATION OF NUCLEAR PHOTOGRAPHIC EMULSIONS. [1961] 13p.
Order from ATS $18.50 ATS-39N56R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel['skii] Kinofotoinst[itut]. Trudy (USSR) 1959, no. 32, p. 5-18.

DESCRIPTORS: *Photographic emulsions, Sensitivity.

Levi, S. M.
THE ACTION OF WETTING AGENTS IN MIXTURES AND WITH MULTILAYER COATINGS. [1961] 11p. 6 refs.
Order from OTS or SLA $1.60 61-20226

Trans. of Uspekhi Nauchnoi Fotografii (USSR) 1960, v. 7, p. 170-177.

DESCRIPTORS: Gelatin, *Photographic emulsions, Coatings, *Wetting agents, Mixtures, Physical properties, Adsorption, Surface tension.

Experiments made it possible to establish two characteristics which are specific to the action of wetting agents in mixtures. The first characteristic is that in mixtures of surfaceactive agents, the properties which are inherent to the mixture of wetting agents are additive. The reduction in the surface tension and the kinetic adsorption (measured both by the kinetic wetting method, and by spreadability) was equivalent to the average value for the components of the given mixture, i.e., of the wetting agents and of the gelatin itself. The second characteristic is that if any property, for example, the antirepellent activity, is characteristic of only one of the components of a given mixture, then this property is retained. Thus, if one of the wetting agents is not adsorbed on the hydrophobic surface of the antirepellency-forming nuclei and thereforé does not disperse the fatty inclusions, then another component of the mixture acts on these surfaces quite freely. In the case of a simultaneous adsorption of two or more wetting agents on the surface of the nuclei a competition for the occupation of the active sites occurs which also exerts an influence on the rate of adsorption. For this reason the properties in such a mixture are represented by the average of the properties of its components. (Extracted)

Plastics

IMPROVEMENT IN THE MANUFACTURE OF OPTICAL AND OPHTALMIC LENSES OF THERMOSETTING SYNTHETIC RESIN (Perfectionnements à la Fabrication de Lentilees Optiques et Ophtalmiques en Resin Synthetique Thermodurcissable). [1961] 13p.
Order from AC $13.00

Trans. of French patent 1 204 627, by Lentilles Ophtalmiques Speciales, 1959.

DESCRIPTORS: *Plastics, *Thermosetting resins, *Lenses, Optical materials, Ophthalmology, Manufacturing methods.

PLASTICS APPLICATION IN RAILCAR (CARRIAGE) CONSTRUCTION. [1961] 15p.
Order from STT $8.00 STT-146-113

Trans. of Deutsche Eisenbahntechnik (East Germany) 1960 [v. 8] no. 9, p. 429-432.

DESCRIPTORS: *Railroad cars, Construction, *Plastics.

Bayer, Otto and Müller, Erwin.
THE BUILD-UP PRINCIPLES OF THE URETHANE-ELASTOMER "VULKOLLAN". [1961] [18]p. (5 figs. formulae omitted) 18 refs.
Order from SLA $1.60 61-20991

Trans. of Angew[andte] Chem[ie] (West Germany) 1960, v. 72, no. 24, p. 934-939.
Another trans. is available from RIS $30.00 as RIS D-669 [1961] 17p.

DESCRIPTORS: *Elastomers, *Urethanes, Synthesis, Glycols, Cyanates, Polymers, *Plastics

A thorough summary of the build-up of elastomers from di-isocyanates and long-chained non-polar glycols, leading to technically useful products, the so-called Vulkollanes, is made. From this group a new kind of materials, the so-called Hartvulkollan (hard Vulkollan) is developed. This is a material having a high degree of solidity which behaves highly elastically when subjected to blows and rapid vibrations. (Author)

Bayer, Otto and Müller, Erwin.
VULCOLANES: THE PRINCIPLE OF URETHANE ELASTOMER PREPARATION. [1961] [14]p. 18 refs.
Order from SLA $1.60 62-10053

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, no. 24, p. 934-939.
Other translations are available from RIS $30.00 as RIS D-669 [1961] 17p. and from SLA $1.60 as 61-20991 [1961] [18]p.

DESCRIPTORS: *Elastomers, *Urethanes, Synthesis, Glycols, Cyanates, Polymers, *Plastics

For abstract see 61-20991 above.

Hauck, Karl-Heinz.
PROCESS FOR COATING OBJECTS OF ALL KINDS WITH UNSATURATED POLYESTER RESINS (Verfahren zum Uberziehen von Gegenstanden Aller Art mit Ungesattigten Polyesterharzen). [1961] 6p.
Order from AC $5.00

Trans. of German patent 1 025 302, 1958.

DESCRIPTORS: *Resins, *Coatings, Copolymerization, Styrenes, Binders, *Esters, *Polymers

Sollmann, H.
GEAR WHEELS OF LAMINATE PLASTICS, PT. 2. [1961] 20p.
Order from STT $10.00 STT-146-111

Trans. of Plaste und Kautschuk (Germany) 1960, v. 7, no. 9, p. 445-449.

DESCRIPTORS: *Plastics, *Gears.

Vodop'yanov, K. A., Vorozhtsov, B. I., and Potakhova, G. I.
THE EFFECT OF GAMMA RADIATION ON THE DIELECTRIC PROPERTIES OF CERTAIN ELECTRICAL INSULATION MATERIALS. II. PHENOL-FORMALDEHYDE PLASTICS (Vliyanie Gamma-izlucheniya na Dielektricheskie Svoistva Nekotorykh Elektroizolyatsionnykh Materialov. II. Fenol'no-formal'degaidnye Plastmassy) tr. by H. H. [1961] 4p. 4 refs. H-9584.
Order from OTS $0.50 61-31678

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 3, p. 133-137.

DESCRIPTORS: Gamma rays, Dielectric properties, *Electric insulation, Insulating materials, *Phenols, *Formaldehyde, Plastics.

Following irradiation with Gamma rays (radiation dose 30,000 to 100,000 roentgens at an output of 500 to 530 r/m) of phenol-formaldehyde plastics there was observed an increase in conductivity losses. The most marked changes in loss angle were observed following irradiation at a temperature of -60°C and under tropical conditions. The relaxation component of losses following irradiation did not change. Practically no change was noted in the specific inductive capacitance of the materials investigated following the action of Gamma rays under the conditions stated. The electrical strength of phenol-formaldehyde plastic material following Gamma ray exposure virtually did not change.

Wood and Paper

DESCRIPTION OF THE SIMMONS THOMPSON PAPER SORTING MACHINE. Oct 61, 3p.
Order from SLA $1.10 61-20896

Trans. of Wochenbl[att fur] Papierfabrik[ation] (West Germany) 1961, v. 89, no. 4, p. 150-151.

DESCRIPTORS: *Paper, Classification.

Andersson, Albin.
SURFACE SMOOTHNESS OF PAPER: A LITERATURE REVIEW. [1961] [43]p. (2 figs. omitted) 60 refs.
Order from SLA $4.60 61-20510

Trans. of Svensk P[appers-]t[idning] 1960, v. 63, [no. 11] p. 356-368.
Other translations are available from ATS $26.75 as ATS-34M44S [1960] 22p. and from SLA $1.60 as 61-20497 [1961] 19p.

DESCRIPTORS: *Paper, *Surface properties, Bibliography, Storage, Printing, Ink, Pressure, Production, Processing, Humidity.

For abstract see 61-20497 above

Andersson, A[lbin].
SURFACE SMOOTHNESS OF PAPER; A REVIEW OF THE LITERATURE. [1961] 19p. [20 figures omitted) 60 refs.
Order from SLA $1.60 61-20497

Trans. of Svensk Pappers-tidn[ing] 1960, v. 63, no. 11 p. 356-368.
Another trans. is available from ATS $26.75 as ATS-34M44S [1960] 22p.

DESCRIPTORS: *Paper, *Surface properties, Bibliography, Storage, Printing, Ink, Pressure, Production, Processing, Humidity.

The references cover the years 1937 through 1959 and are all non-Soviet.

Angervuori, K. and Kenetti, A.
DETERMINATION OF THE SUITABILITY OF UNBLEACHED SULPHITE PULP FOR USE IN THE PRODUCTION OF GREASEPROOF PAPER. Sep 61, 11p. (11 figs. omitted) 20 refs.
Order from SLA $1.60 61-20887

Trans. of Paperi ja Puu (Finland) 1961, v. 43, no. 3, p. 83-92.

DESCRIPTORS: *Paper, Production, *Wood pulp, Cellulose, *Sulfites, Determination, Quality control, Wood pulp machines, Laboratory equipment, Industrial research, Area suction, Drainage.

It is confirmed that the cooking conditions for greaseproof pulps, which one attempts to conform to in the Manta pulp mills are suitable, and the pulp quality of the same general characteristics as are usually described in the literature. As it is difficult to keep the cooking conditions completely constant in mill determinations and as variations occur owing to the quality of the wood, from the standpoint of greaseproof paper machine production it is indispensable to carry out control of the pulp quality already in digestion in the pulp mill before the pulp is pumped to the paper mill, and to use the inferior pulps as regards greaseproof paper production, for other purposes. Hence a method of controlling the quality of the pulp has been developed In this method the E value determination is employed, which originally was intended for use with groundwood pulps, to show the suitability of greaseproof pulps for investigation. The E_W value in particular gives an accurate picture of the drainage characteristics of the pulp. (Author)

Cacheux, P. le.
CONTRIBUTION TO THE THEORY OF BREAKING STRENGTH OF PAPER AND BOARD. Oct 61, 14p. (figs. omitted) 1 ref.
Order from SLA $1.60 61-20898

Trans. of Papeterie (France) 1953, v. 75, no. 10, p. 659-673.

DESCRIPTORS: *Paper, *Fiberboard, Theory, Mechanical properties, Test methods, Solids, Deformation, Elasticity, Measurements, Stresses, Fibers, Bonding.

Chernetsov, M. M.
A STUDY OF STRENGTH OF WOOD SUBJECTED TO TENSION ACROSS THE GRAIN (Issledovanie Prochnosti Drevesiny pri Rastyazhenii Poperek Volokon). 1961, 5p. PL-480 Agr.
Order from OTS $0.50 60-51036

Trans. of Derevoobrabatyvayushchaya Promyshlennost' (USSR) 1957, v. 6, no. 3, p. 17-18.

DESCRIPTORS: *Wood, Tensile properties, Cells (Biology), Moisture, Mechanical properties, Elasticity.

The highest value of tensile strength across the grain is shown by deciduous, diffuse, porous hardwoods; the next, by porous-ring trees, and then, by diffuse, porous softwoods. Coniferous woods show about half the tensile strength of the diffuse porous woods. The radial tensile strength is 1.3 to 1.8 times higher than the tangential, depending on the species. This difference may be explained by the influence of wood rays, which, upon radial tension, must be broken lengthwise. As the direction of tension passes from tangential to radial, the tensile strength gradually increases: this increase is satisfactorily expressed by a parabolic curve. At any given moisture content, the tensile strength of wood across the grain decreases with increasing temperature; this effect is particularly noticeable at temperatures of up to 80°C. As the direction of tension gradually changes from the tangential to the radial, the elasticity modulus of wood first decreases somewhat, reaches a minimum at an angle of about 35 to 45°, then sharply increases and reaches a maximum with radial tension. It is recommended that the data obtained on the tensile strength across the grain of 24 wood species, be incorporated in GOST 4631-49, where they have not been included to date. (Author)

Farkas, Josef.
POSSIBILITIES TO SPEED-UP KRAFT COOKING. [1961] [12]p.
Order from SLA $1.60 61-20190

Trans. of Zellstoff und Papier (Germany) 1961 [v. 10] no. 1, p. 4-[15]

DESCRIPTORS: *Paper industry, Preparation, Wood, Wood pulp, *Sulfate pulp, *Sulfides, *Sulfates, Acids, Hydrolysis, *Impregnation, Atmosphere, Sodium compounds, Hydroxides, *Manufacturing methods

Smaller chips and pre-impregnation are some of the most promising methods to accelerate cooking and to shorten the cooking process. (Author)

Hartler, N.
ASPECTS OF PARALLEL-CUT CHIPS. Aug 61, 8p. (18 figures omitted) 12 refs.
Order from SLA $1.10 61-20042

Trans. of Svensk Pappers-tidn[ing] 1961, v. 64, no. 4, p. 101-108.

DESCRIPTORS: *Wood pulp fibers, *Sulfate pulp, *Sulfites, *Chipping hammers, *Cutting tools, *Rotary compressors, Chemical analysis, Economics, *Paper industry, *Wood pulp machines, Chlorine.

Chipping with the cutting direction parallel with the fibre direction in the wood should theoretically give chips (p-chips) exhibiting a minimum of compression damage. This principle has long been used in the flakers, but these machines produce chips which are too thin for pulp production and in addition their capacity is too low. Recently designed drum machines in the U.S.A. and Canada produce p-chips which are practically free from compression damage. For different sulfite pulps this signifies an improvement in strength properties of 10-15%. On the other hand, with sulfate pulping, it should be possible using p-chips to pulp to a higher unbleached chlorine number without any increase in the screenings content. (Author)

Kanter, K. R.
THE THERMAL PROPERTIES OF WOOD (O Teplovykh Svoistvakh Drevesiny). [Dec 61] 4p. PL-480 Agr.
Order from OTS $0.50 60-51033

Trans. of [Derevoobrabatyvayushchaya Promyshlennost'] (USSR) 1957, v. 6, no. 7, p. 17-18.

DESCRIPTORS: *Wood, Specific heat, Heat transfer, Thermal diffusion, Temperature, Humidity, Moisture, Pine, Larch, *Wood pulp fibers, Determination, Thermodynamics, Trees.

The prevailing thought that the heat conductivity across the fiber is larger than the heat conductivity along the fiber was disproved. The contention that the ratio of heat conductivity along and across the grain, and the ratio of radial and tangential heat conductivity, tend to unity as the moisture content increases, is also disproved. (Author)

Lyberg, Bengt.
SOME ASPECTS OF THE FUTURE OF THE SWEDISH PULP INDUSTRY. [1961] 5p.
Order from SLA $1.10 61-18863

Trans. of Norsk Skogindustri (Norway) 1961, v. 15, no. 3, p. 119-122.

DESCRIPTORS: Sweden, *Cellulose, *Wood pulp, Economics, Commerce, Consumption, Transportation, Industrial production, *Paper industry, Packaging.

Österberg, L[ars], Brauns, O[tto] and Back, E[rnst].
ONE-SIDED WATER AND OIL ABSORPTION OF HARDBOARDS. May 1961, 6p. (13 figs. omitted) 11 refs.
Order from SLA $1.10 61-18568

Trans. of Svensk Pappers-tidning, 1960, v. 63, no. 19, p. 658-[664].

DESCRIPTORS: *Paper industry, *Water, *Oils, Absorption, Liquids, Test methods, *Fiberboard, *Wood pulp, Penetration, Chemical properties, Heat treatment.

Pamfilov, V. V.
A METHOD FOR MEASURING THE WORK AND THE DEFORMATION OF A WOOD SPECIMEN UNDER IMPACT TESTING (Metod Ucheta Raboty i Deformatsii Obraztsa Drevesiny pri Udarnykh Ispytaniyakh). 1961, 3p. PL-480 Agr.
Order from OTS $0.50 60-51037

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 3, p. 333-334.

DESCRIPTORS: *Wood, Energy, Demolition, *Photoelectric effect, *Impact shock, Plastic flow, Stresses, Measurement, *Amplifiers, *Electronic equipment, *Oscilloscopes, *Optical systems, Test equipment, *Deformation.

The method takes advantage of the photoelectric effect and permits the determination of the plastic flow limit of wood under impact testing on the ordinary MK-30 pendulum-type impact machine. The apparatus consists of a pendulum-type impact machine, a modulator, an optical system with a light source, a photocell, an electronic amplifier and a loop oscilloscope. By using the method the various stages of failure of wood under impact testing may be determined. This is particularly interesting for the study of the strength characteristics of wood.

Simionescu, C. and Poppel, E.
METHODS FOR DETERMINING THE SIZING DEGREE OF PAPER. May 61, 6p. (9 figs. 2 tables omitted) 14 refs.
Order from SLA $1.10 61-18269

Trans. of Institutul Politehnic, Iasi. Buletinul (Rumania) 1958, v. 4, no. 8, p. 227-236.
Another trans. is available from SLA $1.60 as 61-10397 [1960] [17]p.

DESCRIPTORS: *Paper, Determination, Processing, Liquids, Penetration, Cellulose, Ink, Test methods, Synthetic fibers, *Coatings, *Sizing.

For abstract see Technical Translations 6: 688, 1961.

Tröger, H.
EFFECT OF PROLONGED EXPOSURE TO ELEVATED TEMPERATURES ON THE PHYSICAL PROPERTIES OF PRESSPAHNS. Oct 61, 3p. (1 fig. 2 tables omitted) 3 refs.
Order from SLA $1.10 61-20905

Trans. of Zellstoff u[nd] Papier (Germany) 1957, v. 6, no. 9, p. 279-281.

DESCRIPTORS: Exposure, *High temperature research, Physical properties, *Wood pulp fibers, *Insulating materials, *Electric insulation, *Electrical equipment, Paper industry

Zhitkov, P. N.
THE DETERMINATION OF THE BULK DENSITY OF PRESSED WOOD BY METHOD OF TRACER ATOMS (Opredelenie Ob"emnogo Vesa Pressovannoi Drevesiny Metodom Mechenykh Atomov). 1961, 4p. PL-480 Agr.
Order from OTS $0.50 60-51035

Trans. of Derevoobrabatyvayushchaya Promyshlennost (USSR) [1958] v. 7, no. 3, p. 16-17.

DESCRIPTORS: *Wood, *Density, *Tracer studies, *Mechanical properties, *Radioactive isotopes, Half life, Geiger counters, Measurement.

MATHEMATICS

Yanovskaya, S. A.
SOME ASPECTS OF THE DEVELOPMENT OF MATHEMATICAL LOGIC AND ITS RELATION TO TECHNICAL APPLICATIONS. 14 Nov 61 [17]p. 14 refs. JPRS: 11040.
Order from OTS or SLA $1.60 62-13545

Trans. of mono. Primenenie Logiki v Nauke i Tekhnike (The Application of Logic in Science and Technology) Moscow, 1960, p. 3-21.

DESCRIPTORS: Mathematics, *Mathematical logic, History.

Report read at the All-Union Conference on the Theory of Relay Units, 3 October 1957.

Computing Devices

USSR PUSHES MECHANIZATION OF ACCOUNTING AND CALCULATING OPERATIONS. 2 Aug 61, 16p. JPRS: 8659.
Order from OTS $0.50 61-31565

Trans. of Bukhgalterskii Uchet (USSR) 1960, no. 9, p. 5-10 and no. 10, p. 5-11

DESCRIPTORS: *Data processing systems, Operation, *Digital computers, Computers, Machines, USSR.

Contents:
Planning the mechanization of accounting and calculating operations in the national economy, by N. Belkin
For more extensive mechanization of accounting and calculating operations, by S. Sazonov.

Evreinov, E. V. and Kosarev, Yu. G.
EFFECTIVENESS OF GENERAL-PURPOSE COMPUTERS FOR TRANSLATION PURPOSES. Foreign Developments in Machine Translation and Information Processing, no. 39. 16 Oct 61, 7p. 2 refs. JPRS: 10509.
Order from OTS $0.50 61-31688

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. (?) 9p.

DESCRIPTORS: *Machine translation, *Digital computers, Computers, Effectiveness.

The all-purpose M-20 computer is capable of producing translation of specialized literature at an acceptable rate of speed. The delay in introducing machine translation is due to the lack of algorithms and programs. Since it is possible to achieve fairly high speeds on existing computers, not to mention those that will be available in the near future, there is no need to think in terms of designing special machines for the purpose. The M-20 should include a reading

device and phototransmitter for the input of punch tape (or the operation of the input devices should be combined with the other parts of the machine). These improvements are needed not only for machine translation, but also for the solution of problems in other branches of mathematical linguistics, economics, information, etc. (Author)

Il'inskaya, N.
THE WORKING DAY OF "STRELA". 21 Dec 61 [6]p. JPRS: 11548.
Order from OTS or SLA $1.10 62-13659

Trans. from Ekonomicheskaya Gazeta (USSR) 1961 [no. 10] p. 4-5.

DESCRIPTORS: *Digital computers, Computers, Scheduling, USSR, Satellite vehicles, Tracking, Satellite vehicle trajectories, Determination.

METALLURGY

INTERNATIONAL CONFERENCE ON TRANSPORTATION, AT DUSSELDORF, OCT 56: DISCUSSION. 19 Nov 58 [24]p. 19 refs.
Order from SLA $2.60 61-20621

Trans. of discussion pub. by the Verein Deutscher Eisenhüttenleute, n.d.

DESCRIPTORS: Conferences, *Transporation, *Iron industry, *Steel industry, Industrial equipment.

PUMPS FOR LIQUID METALS. [1961] 9p.
Order from STT $4.00 STT-127-301

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 8, p. 417-419.

DESCRIPTORS: *Liquid metal pumps, Pumps.

Agranat, B. L.
INTENSIFICATION OF DEGREASING AND PICKLING PROCESSES BY ULTRASONICS. Nov 61.
Order from BISI £4 15s BISI-2248

Trans. of Lakokras[ochnye] Materialy i Ikh Primenenie (USSR) 1960, no. 1, p. 58-62.

DESCRIPTORS: *Pickling, *Detergents, *Ultrasonic radiation, Solutions, Corrosion inhibition, Pickling compounds, *Cleaning fluids.

Bartocci, A. and Marianeschi, E.
THE MANUFACTURE OF FORGINGS FOR THE 200 MW ROTOR-GENERATOR OF THE S.E.N.N. ELECTRONUCLEAR STATION. Dec 61.
Order from BISI £8 5s BISI-2488

Trans. of paper presented at the Conference on Heavy Forging, Terni, Sep 61.

DESCRIPTORS: *Nuclear power plants, Power plants, *Rotor blades, *Generators, Forging, Casting, Machining, Heat treatment

Bogatenkov, V. F. and others.
DESILICONISATION OF OPEN-HEARTH HOT METAL IN THE MIXER. Dec 61.
Order from BISI £3 BISI-2504

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Met[allurgiya] (USSR) 1961, no. 8, p. 32-36.

DESCRIPTORS: *Open hearth furnaces, Metals, Temperature, Purification, *Silicon, Separation.

Duflot, J. and Derot, S.
INVESTIGATION ON SLAB MOULDS OF MORE THAN THREE TONS. [1961] [88]p. 20 refs.
Order from SLA $8.10 61-18850

Trans. of unidentified French language mono., n.p., 1958?

DESCRIPTORS: Castings, Steel industry, Cast steel, Consumption, *Molding, Molding materials, Fracture (Mechanics), Rolling mills, *Steel castings, Metals.

The report, confined to small end up ingot moulds, is based on the examination of the characteristics of 58 different moulds. (Author)

Gotlib, A. D.
CONTROL OF THERMAL CONDITIONS IN THE BLAST FURNACE. Oct 61, 4900 words.
Order from HB $12.90 HB-5141

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 2, p. 10-21.

DESCRIPTORS: *Blast furnaces, Heat transfer, *Temperature control, Control

Gruber, H.
PROCESS VARIATIONS. Pt. 1 of the Melting of Metals with Electron Beams. [1961] 33p.
Order from ATS $45.40 ATS-77N56G

Trans. of Z[eitschrift für] Metallkunde (West Germany) 1961, v. 52, no. 5, p. 291-309.

DESCRIPTORS: *Electron beams, *Metals, Melting, Liquid metals, Processing.

Grossman, Horst.
MODERNIZING THE NATIONALIZED FINOW ROLLING MILL. [1961] 14p.
Order from STT $7.00 STT-152-297

Trans. of Neue Hütte (East Germany) 1960, v. 5, no. 12, p. 730-733.

DESCRIPTORS: *Rolling mills, Design.

Gurevich, Yu. G.
LABORATORY STUDY OF NITROGEN ELIMINATION FROM LIQUID Ti-CONTAINING 18% Cr, 10% Ni STEEL. Nov 61, 4200 words.
Order from HB $12.60 HB-5135

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 1, p. 21-30.

DESCRIPTORS: *Liquid metals, *Titanium, Purification, *Nitrogen, Separation, *Steel, Nitrides, Chromium, Nickel.

Guthmann, K.
THE PROBLEM OF CLEAN AIR, WITH SPECIAL REFERENCE TO THE IRON AND STEEL INDUSTRY PARTICULARLY STEELWORKS. IV. KEEPING THE AIR CLEAN, AN OBLIGATION AND PROBLEM OF OUR TIME (WITH DISCUSSION). Oct 61, 64 refs.
Order from BISI £10 BISI-1180

Trans. of Radex-Rund[schau] (Austria) 1961, no. 1, p. 449-484.

DESCRIPTORS: *Steel industry, *Iron industry, Safety, Air, Contamination, Cleaning, Public health, Industrial plants.

Hartz, H.
PROBLEMS OF FOUNDATIONS FOR FORGING HAMMERS. Dec 61.
Order from BISI £3 5s BISI-2176

Trans. of Industrie Anzeiger (West Germany) 1959, v. 81, no. 43, p. 653-657.

DESCRIPTORS: *Hammers, *Forging, *Foundations (Structures)

Isimitu, A., Sigemi, A., and Higasi, T.
REDUCTION OF IRON ORES BY NITROGEN + CARBON MONOXIDE + HYDROGEN. Nov 61, 600 words.
Order from HB $2.80 HB-5285

Trans. of Tetsu to Hagane (Japan) 1959, v. 45, no. 9, p. 893-895.

DESCRIPTORS: *Iron, *Ores, Reduction, Nitrogen, Carbon compounds, Monoxides, Hydrogen, Steam.

Kienzle, O.
DESIGN PRINCIPLES AND PRACTICAL PRODUCTION OF SHEET STAMPINGS. Dec 61.
Order from BISI £ 4 15s BISI-2377

Trans. of Forschungsges[ellschaft] Blechverarbeitung [e. V.]. Mitteilungen (Germany) 1955, no. 13, p. 153-160.

DESCRIPTORS: *Sheets, Processing

Levenets, N. P. and others.
OXIDATION OF CHROMIUM AND PHOSPHORUS DURING OXYGEN TOP BLOWING OF STEEL. Nov 61, 2300 words.
Order from HB $5.90 HB-5361

Trans. of mono. Fiz[iko]-Khim[icheskie] Osnovy Proiz. Stali (no. 5). Proc[eedings] Moscow, 1961, p. 237-244.

DESCRIPTORS: Steel, Production, *Chromium, *Phosphorus, Oxidation, Heat treatment, Slags, Iron.

Limpach, R. and Marincek, B.
GASES IN FERROALLOYS. Aug 61, 2800 words.
Order from HB $8.40 HB-5076

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1960, v. 31, no. 11, p. 639-643.

DESCRIPTORS: *Iron alloys, Metallurgical analysis, *Gases, *High temperature research, Zirconium alloys, Calcium compounds, Chromium alloys, Manganese alloys, Magnesium alloys, Aluminum alloys, Titanium alloys, Vanadium alloys, Alloys.

Lindstrand, F. K.
LOT SIZE IN HOT ROLLING (WITH DISCUSSION). Nov 61.
Order from BISI £10 BISI-2311

Trans. of Jernkont[oret, Stockholm]. Annaler (Sweden) 1960, v. 144, no. 8, p. 573-627.

DESCRIPTORS: *Rolling mills

Maehara, S. and others.
RAPID PHOSPHORUS ELIMINATION FROM THE BASIC OXYGEN (LD) FURNACE BATH. Oct 61, 1400 words.
Order from HB $4.90 HB-5122

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 3, p. 283-285.

DESCRIPTORS: *Blast furnaces, Steel, Purification, Phosphorus, Separation.

Mieth, W. -H.
DEVELOPMENT OF A GENERAL TIME BALANCE FOR METALLURGICAL PLANTS. Dec 61.
Order from BISI £4 BISI-2322

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 30 Mar, p. 422-431.

DESCRIPTORS: Management engineering, *Foundries, Operation, *Time.

Moehring, H.
A MODERN CONTINUOUS PICKLING PROCESS (SPRAY PICKLING). Dec 61.
Order from BISI £ 4 15s BISI-2378

Trans. of Metall-Rein[igung Vorbehandlung] (West Germany) 1960, v. 9, Jan, p. 3-9.

DESCRIPTORS: *Pickling, Cleaning fluids, Enamel coatings, *Pickling compounds

Nagano, Y. and Nakai, K.
TREATMENT OF SOME MELTS WITH LOW ULTRASONIC ENERGY. Oct 61, 1400 words.
Order from HB $3.90 HB-5217

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1209-1211.

DESCRIPTORS: Aluminum, Steel, *Castings, *Liquid metals, *Waxes, Liquids, Processing, *Ultrasonic radiation, Radiation effects.

Nemilov, V. A. and Strunina, T. A.
AN INVESTIGATION OF THE SYSTEM: PALLADIUM-SILVER-NICKEL. [1961] 12p.
Order from ATS $19.85 ATS-95N55R

Trans. of Akademiya] Nauk SSSR. Sektor Platiny i Drug[ikh] Blagorod[nykh] Metal[lov]. Izvest[iya] 1949, v. 24, p. 15-25.

DESCRIPTORS: *Palladium alloys, *Silver alloys, *Nickel alloys, Alloys.

Ohba, H. and Sugita, K.
ON THE WEAR PATTERN FOR THE LININGS IN BASIC OXYGEN LD FURNACES. Oct 61, 1350 words.
Order from HB $4.25 HB-5227

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 343-345.

DESCRIPTORS: Blast furnaces, *Combustion chamber liners, Refractory materials, *Brick, *Refractory coatings, Chemical properties, *Dolomite, Effectiveness, Oxygen.

Patterson, W. and Neumann, F.
LAWS GOVERNING CUPOLA MELTING. Nov 61, 5800 words.
Order from HB $9.75 HB-5200

Trans. of Giesserei (West Germany) 1961, v. 48, no. 3, p. 49-56.

DESCRIPTORS: *Cupola furnaces, Operation, Analysis, Metals, Melting, Mathematical analysis, *Industrial production.

Pelzel, Erich.
SURFACE TENSION OF MOLTEN METALS AND THEIR ALLOYS, I. [1961] [22]p. (4 figs. omitted) 15 refs.
Order from SLA $2.60 61-20205

Trans. of Berg- und Hüttenmännische Monatshefte (Austria) [1948] v. 93, no. 12, p. 248-254.

DESCRIPTORS: *Liquid metals, *Alloys, Surface tension.

Pivko, V. M.
MECHANIZATION AND AUTOMATION OF TRANSPORT IN THE FOUNDRY INDUSTRY. [1961] 21p.
Order from STT $15.00 STT-146-205

Trans. from Liteinoe Proizvodstvo (USSR) 1960, no. 12.

DESCRIPTORS: *Foundries, *Ores, Transportation, *Automation.

Podol'skaya, G. A.
TRIAL OPERATION OF A 400-TON OPEN-HEARTH FURNACE ON HIGH-PRESSURE NATURAL GAS. Oct 61, 2200 words.
Order from HB $5.85 HB-5213

Trans. of #Metallurg (USSR) 1961 [v. 6] no. 6, p. 13-16.

DESCRIPTORS: *Open hearth furnaces, Operation, *Natural gas, Fuel consumption, Fuel injection.

Ramazanzade, M. G.
SURFACE TENSION OF METALS. [1961] 3p.
Order from ATS $5.25 ATS-14N56R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Fizika (USSR) 1959, no. 1, p. 172-173.

DESCRIPTORS: *Metals, Surface tension.

Strikwerda, S.
SEPARATE SHIP-DISCHARGING AND BARGE-LOADING IN SEA PORTS. Sep 61.
Order from BISI £6 5s BISI-2294

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 [no. 9] p. 529-537.

DESCRIPTORS: *Ores, Transportation, Shipping, Harbors.

Ting, Shu-liang.
ACHIEVEMENTS IN BLAST FURNACE OPERATION IN CHINA. Oct 61, 1600 words.
Order from HB $3.80 HB-5119

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1959, no. 8, p. 17-19.

DESCRIPTORS: *Blast furnaces, Operation, Cast iron, Production, China.

Tschirschwitz, K.
THE MECHANICAL COLD SCARFING OF SLABS (WITH DISCUSSION OF THIS PAPER AND BISI 2463). Nov 61.
Order from BISI £3 5s BISI-2464

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 14 Sep, p. 1284-1287.

DESCRIPTORS: *Sheets, Processing, *Metals, Manufacturing methods.

Tsukamoto, F. and others.
AGING EMBRITTLEMENT OF HIGH CHROME-NICKEL STEELS (STUDY I). Oct 61, 1200 words.
Order from HB $3.60 HB-5291

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 556-558.

DESCRIPTORS: *Steel, *Chromium alloys, *Nickel alloys, *Stainless steel, Heat treatment, Corrosion, Aging, Rupture, *Fracture (Mechanics).

Tsukamoto, F. and others.
FATIGUE STRENGTH OF HIGH CHROME-NICKEL STEELS AT ELEVATED TEMPERATURES (STUDY III). Oct 61, 800 words.
Order from HB $2.95 HB-5337

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 561-562.

DESCRIPTORS: *Austenite, *Steel, Temperature, Fatigue (Mechanics), *Chromium alloys, *Nickel alloys, Alloys.

Tsukamoto, F. and Suzuki, T.
HOT DUCTILITY OF HIGH CHROME-NICKEL STEELS (STUDY II). Oct 61, 1300 words.
Order from HB $3.90 HB-5336

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 558-560.

DESCRIPTORS: *Steel, Austenite, Alloys, Heat treatment, *Chromium alloys, *Nickel alloys.

Turbovskii, M. M.
LIQUID MODIFICATION. [1961] 5p.
Order from ATS $8.00 ATS-46N56R

Trans. of Liteinoe Proizvodstvo (USSR) 1952, no. 6, p. 16-18.

DESCRIPTORS: *Liquid metals, Processing.

Turbovskii, M. M.
THE MECHANISM OF THE LIQUID MODIFICATION PROCESS. [1961] 5p.
Order from ATS $7.75 ATS-06N56R

Trans. of Liteinoe Proizvodstvo (USSR) 1956, no. 2, p. 15-16.

DESCRIPTORS: *Liquid metals, Processing, Liquids.

Vltavsky, M.
THE TECHNOLOGY OF WELDING HIGH-STRENGTH CHAIN LINKS. Dec 61.
Order from BISI £5 15s BISI-2487

Trans. of Zvaranie (Czechoslovakia) 1960, v. 9, no. 3, p. 78-80.

DESCRIPTORS: *Welding.

Voronov, B. G.
SPECTROGRAPHIC WORK OF THE METAL-PHYSICS LABORATORY OF THE STALINGRAD BRANCH OF GIPROMEFTEMASH (STATE DESIGN AND SCIENTIFIC RESEARCH INSTITUTE FOR PETROLEUM MACHINERY). Nov 61.
Order from BISI £4 BISI-2369

Trans. of Lvov U. Fiz[icheskii] Sbornik (USSR) 1958, no. 4(9) p. 395-402 ([Vsesoyuznye] Soveshchaniya po Spektroskopii (no. 10). [Lvov, 1956]. Materialy, v. 2.

DESCRIPTORS: *Metallurgical laboratories, Electric discharges, Generators, Petroleum industry, Sparks, Machines.

Wondris, E. and Seul, V.
HARDNESS TESTING OF THIN-GAUGE SHEET AND TIN PLATE. Rept. no. 64 of the Cold Rolling Committee and Rept. no. 1220 of the Materials Committee of the [Verein Deutscher Eisenhüttenleute]. [1961] [25]p. 17 refs.
Order from SLA $2.60 61-18315

Trans. of [Stahl und Eisen (West Germany) 1960, v. 80, 17 Mar, p. 356-365].
Another trans. is available from BISI £5 5s as BISI-1924 [1961].

DESCRIPTORS: *Sheets, Test methods, *Hardness, *Metal plates.

From the statement of events upon impressing a ball into thin sheet, the influence of the sheet hardness as it depends on sheet thickness in test data for the Rockwell Superficial 30T process and the Vickers test with 3 kg. load is described. The influence of the hardness of the test anvil is described, and the requirements of uniform working conditions- polished diamond anvil for the R30T process and a polished plate of hard material, e.g., of hardened steel for the V-3 process, is established. (Author)

Zhao, Ji-sheng, compiler.
A GUIDE TO SCIENTIFIC AND TECHNICAL REFERENCE WORKS: METAL SCIENCE AND METALLURGICAL PROCESSES SECTION. [1961].
Order from BISI £4, BISI-2449
Libraries of Academic Institutions £1

Translated from a microfilm obtained from America.

DESCRIPTORS: *Scientific reports, *Metallurgy, Bibliography, Reports, Documentation.

Ferrous Metals

Akutagawa, T. and others.
DIRECT OBSERVATION OF NON-METALLIC INCLUSIONS IN STEEL WITH AN ELECTRON MICROSCOPE. Nov 61.
Order from BISI £9 10s BISI-2399

Trans. of Tetsu to Hagane (Japan) 1957, v. 43, Nov, p. 1222-1228.

DESCRIPTORS: *Steel, Impurities, *Electron microscopy.

Bandow, Kurt and Wagner, Karl.
CONTRIBUTION TO DEOXIDATION AND DESULPHURISATION IN THE CUPOLA FURNACE. [1959] [22]p. 27 refs.
Order from SLA $2.60 61-20588

Trans. of Giesserei (West Germany) 1958, v. 45, no. 15, p. 409-417.
Another trans. is available from BISI £5 5s as BISI-1298 [1959].

DESCRIPTORS: *Cupola furnaces, *Iron, Production, Deoxidation, Desulfurization.

Bastien, P.
THE CRACKING AND FRACTURE OF STEEL CHARGED WITH HYDROGEN. [1959] [38]p. 43 refs.
Order from SLA $3.60 61-20618

Trans. of Materialprüfung (West Germany) 1959 [v. 1] no. 1, p. 3-12.
Another trans. is available from BISI £7 as BISI-1260 [1959].

DESCRIPTORS: *Steel, *Fracture (Mechanics), Hydrocarbons, Decomposition, Hydrogen, Metallurgical analysis.

The preferred localization of hydrogen in the iron lattice is evidenced by a special deformation in the planes [112], as is shown by X-rays. This indicates that hydrogen occupies a tetrahedral position as a lattice element in the cubic body-centred lattice of α iron. A mechanism is proposed for hydrogen embrittlement. According to this the hydrogen in its state of equilibrium in faults in the lattice is not the cause of brittleness; it occurs during the course of plastic deformation when the protons carried along by dislocation movements cause local supersaturations of hydrogen in the stacks of dislocations. This is combined with an increase in pressure which builds up a triaxial state of stress in the metal around crystal gaps formed by cold working, thus favouring embrittlement.

Danilov, P. M. and Karachentseva, L. N.
EFFECT OF TAPPING SLAG UPON THE CONTAMINATION OF STEEL BY NON-METALLIC INCLUSIONS. Nov 61, 3400 words.
Order from HB $8.90 HB-5208

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 4, p. 59-66.

DESCRIPTORS: *Slags, *Steel, Impurities, Heat treatment, Contamination.

Engell, H. J.
THE CONCENTRATION GRADIENT OF IRON-ION-VACANCIES IN WUSTITE SCALING FILMS AND THE MECHANISM OF OXIDATION OF IRON. [1961] [13]p. 15 refs.
Order from SLA $1.60 61-20592

Trans. of Acta Metallurgica (U.S.) 1958, v. 6, no.6, p. 439-445.

DESCRIPTORS: *Iron, Oxidation, *Wustite, Lattices, Crystal structure, Ions

Eckhard, Siegfried.
REGARDING THE SPECTROCHEMICAL DETERMINATION OF PHOSPHORUS IN STEEL WITH THE PHOSPHORUS LINE 3175 Å. Rept. no. 251 of the Chemists Committee of the [Verein Deutscher Eisenhüttenleute]. [1961] 20p. 21 refs.
Order from SLA $1.60 61-20591

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1958, v. 29, no. 2, p. 89-94 (Max-Planck Institut für Eisenforschung (West Germany). Communication-754.
Another trans. is available from BISI £5 5s as BISI-1315 [1959].

DESCRIPTORS: *Steel, Spectrographic analysis, *Phosphorus, Determination, Metallurgical analysis, Chemical engineering.

It is shown that the line 3175 Å could not be excited. In a critical consideration the reasons for the failure are discussed. (Author)

Eminger, Z.
STEELS WITH OVER 1% BORON CONTENT. Nov 61.
Order from BISI £6 BISI-2462

Trans. of Hutnicke Listy (Czechoslovakia) 1960, v. 15, no. 12, p. 955-961.

DESCRIPTORS: *Steel, *Boron, Boron steel.

Ernst, T. and Konig, G.
A NEW-OPTICAL METHOD FOR THE DETERMINATION OF NON-METALLIC INCLUSIONS IN STEEL. [1960].
Order from BISI £3 BISI-1752

Trans. of V[erein] D[eutscher] Emailfachleute [e. V.]. Mitt[eilungen] (West Germany) 1959 [v. 7] Dec, p. 93-96.

DESCRIPTORS: *Steel, Optical analysis, Impurities, Determination, Refractive index.

Geipel, H.
EXPERIENCES IN TREATING THE SURFACE OF SEMI-FINISHED PRODUCTS OF ALLOY STEELS BY FLAME GOUGING AND GRINDING. Nov 61.
Order from BISI £ 5 5s BISI-2362

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 8 June, p. 787-794.

DESCRIPTORS: *Steel, Processing, Alloys.

Gel'd, P. V. and Ryabov, R. A.
EFFECT OF CARBON ON THE PERMEABILITY OF STEELS TO HYDROGEN. Nov 61, 1500 words.
Order from HB $4.25 HB-5360

Trans. of mono. Fiz[iko]-Khim[icheskie] Osnovy Proizv. Stali [(no. 5). Proceddings] Moscow, 1961, p. 457-460.

DESCRIPTORS: *Steel, Permeability, *Carbon, *Hydrogen, Diffusion.

Girshovich, N. G.
THE EFFECT OF SUPERHEATING DURING MELTING AND MODIFICATION ON THE PROPERTIES OF GREY CAST IRON. [1961] 13p.
Order from ATS $19.45 ATS-09N56R

Trans. of Liteinoe Proizvodstvo (USSR) 1960, no. 7, p. 26-32.

DESCRIPTORS: *Cast iron, Heat treatment, Melting.

Greenway, P.
THE EFFECT OF COMPANION ELEMENTS ON SEMI-KILLED STEEL. Nov 61.
Order from BISI £ 7 10s BISI-2424

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 3 Aug, p. 1047-1056.

DESCRIPTORS: *Steel, Production, *Steel castings, Purification, Molds, Chemical reactions, *Slags.

Grozin, B. D. and Yaroshek, A. D.
NONDESTRUCTIVE TESTING OF HEAT TREATMENT OF SURFACE ZONE OF MACHINE COMPONENTS. Oct 61, 1100 words.
Order from HB $4.25 HB-5198

Trans. of Akad[emiya] Nauk URSR [Kiev]. Dopovidi, 1961, no. 3, p. 321-324.

DESCRIPTORS: *Non-destructive testing, *Steel, Heat treatment.

Hauttmann, H.
BURSTING TESTS ON STRUCTURAL STEELS FREE FROM BRITTLE FRACTURE. Dec 61.
Order from BISI £3 10s BISI-2429

Trans. of Schweisstechnik (Austria) 1959, v. 13, Feb, p. 13-19.

DESCRIPTORS: *Steel, Fracture (Mechanics), Rupture, *Steel tubing, *Welds.

Hollinderbäumer, W.
CONVERTER PRACTICE. [1961] 4p.
Order from SLA $1.10 61-18873

Trans. of Giesserei (West Germany) 1941 [v. 28] p. 491-492.

DESCRIPTORS: *Steel castings, Castings, Manufacturing methods.

Horn, E.
METALLOGRAPHIC INVESTIGATION OF CRACKS IN HIGH TEMPERATURE STEEL CREEP SPECIMENS. July 61.
Order from BISI £ 2 5s BISI-2178

Trans. of DEW Techn. Ber. [sic] 1961, no. 1, p. 17-19.

DESCRIPTORS: *Steel, *Metallurgical analysis, Fracture (Mechanics), Creep.

Koselev, V. and Burda, St.
DENDRITIC SEGREGATION AND ITS EFFECT ON THE OCCURRENCE OF DEFECTS IN STEEL. Nov 61, 5900 words.
Order from HB $15.90 HB-5215

Trans. of Hutnik (Czechoslovakia) 1961, v. 11, no. 6, p. 268-276.

DESCRIPTORS: *Steel, Impurities, Crystal structure, Mechanical properties, Fracture (Mechanics), Heat treatment, *Metallurgical analysis.

Kosterev, L. B. and Oiks, G. N.
SEGREGATION OF ELEMENTS DURING THE SOLIDIFICATION OF 18-TON RIMMING STEEL INGOTS. Oct 61, 3900 words.
Order from HB $9.85 HB-5100

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1960, no. 11, p. 50-60.

DESCRIPTORS: *Steel castings, Production, Separation, Hardening

Maehara, S. and others.
PRODUCTION OF QUALITY LOW-PHOSPHOROUS, HIGH-CARBON STEEL BY THE BASIC OXYGEN (LD) PROCESS. Oct 61, 1800 words.
Order from HB $5.75 HB-5228

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 345-348.

DESCRIPTORS: *Steel, Quality control, Production, Carbon alloys, Oxygen.

Medovar, B. I.
ELECTROSLAG REMELTING (A NEW EFFECTIVE MEANS OF IMPROVING THE QUALITY OF STAINLESS STEELS AND ALLOYS).
Order from BISI £6 10s BISI-2498

Trans. of mono. Stainless Steel Symposium, Prague, 1961. Preprint no. 11, 19p.

DESCRIPTORS: *Slags, *Stainless steel, Alloys, Processing, Quality control, *Steel castings.

Molinder, G.
ISOTHERMAL TRANSFORMATION DIAGRAMS FOR MARTENSITIC STAINLESS STEELS ADOPTED AS SWEDISH STANDARD. July 61.
Order from BISI £2 BISI-2270

Trans. of Jernkont[orets] Tekn[ista] Rad (Sweden) 1961, no. 261, p. 723-732.

DESCRIPTORS: Transformations, *Stainless steel, *Martensite, Phase transitions, Standards, Sweden.

Motz, J.
THE FATIGUE PROPERTIES OF S. G. IRON. Dec 61.
Order from BISI £2 BISI-2494

Trans. of VDI Berichte (West Germany) 1961, v. 49, p. 43-46.

DESCRIPTORS: *Iron, *Fatigue (Mechanics).

Nilles, P.
CARBON ELIMINATION FROM STEEL BATHS AT THE END OF THE REFINING STAGE. Nov 61, 3900 words.
Order from HB $7.80 HB-5249

Trans. of Revue Universelle des Mines (France) 1961, v. 104 [ser. 9, v. 17] no. 7, p. 401-408.

DESCRIPTORS: *Steel, Production, Chemical equilibrium, Carbon, Oxygen.

Odone, G.
QUALITY CONTROL IN THE IRON AND STEEL INDUSTRY. Dec 61.
Order from BISI £5 5s BISI-1863

Trans. of mono. Convegno sul Controllo Statistico della Qualita (Conference on Statistical Quality Control) Milan, Oct 59, 11p.

DESCRIPTORS: *Iron industry, *Steel industry, Quality control.

Okamoto, M. and others.
HIGH-TEMPERATURE PROPERTIES OF 316L TYPE STEELS MELTED IN NITROGEN UNDER INCREASED PRESSURE. Oct 61, 900 words.
Order from HB $2.80 HB-5338

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 563-564.

DESCRIPTORS: *Steel, Melting, *Heat resistant alloys, *Nitrogen.

Poggio, J[osé] A[ntonio] G[arcia].
THE USE OF STEELS AT HIGH LEVELS OF TENSILE STRENGTH (Contribución al Empleo de los Aceros en Niveles Elevados de Resistencia). [1961] [65]p. 37 refs.
Order from SLA $6.60 61-18735

Trans. of Tecnica Metalurgica (Spain) 1957 [v. 13, no. 109] p. 1-43.

DESCRIPTORS: *Steel, *Tensile properties, Temperature, Chemical analysis, Melting, Forging, Grains (Metallurgy), Cast steel, Silicon, Stability, Stresses, Hardenability, Transformations, Fatigue (Mechanics).

Ritter, E. and Schmitt, H.-G.
MECHANICAL SCARFING OF SEMI-FINISHED PRODUCTS FOR THE MANUFACTURE OF SEAMLESS TUBES. Nov 61.
Order from BISI £6 10s BISI-2463

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 14 Sep, p. 1274-1283.

DESCRIPTORS: *Steel tubing, Manufacturing methods.

Roques, C. and others.
THE MANUFACTURE OF ROTORS. Dec 61.
Order from BISI £7 10s BISI-2508

Trans. of paper presented at the Conference on Heavy Forging, Terni, Sep 61.

DESCRIPTORS: *Rotor blades, Materials, Steel, Production, Forging,

Skarupke, K.-H. and others.
THE HEAT TREATMENT OF ROLLER BEARING STEELS USING A NEW METHOD WITH A PROTECTIVE ATMOSPHERE. Dec 61.
Order from BISI £6 15s BISI-2410

Trans. of Neue Hütte (East Germany) 1961, v. 6, July, p. 399-410.

DESCRIPTORS: *Steel, Heat treatment, *Roller bearings.

Speith, K. G. and Bungeroth, A.
CONTINUOUS CASTING OF QUALITY AND MASS-PRODUCED STEELS: PROBLEMS STILL TO BE SOLVED. Dec 61.
Order from BISI £4 5s BISI-2385

Trans. of Tech[nische] Mitt[eilungen] (West Germany) 1961, v. 54, Feb, p. 82-87.

DESCRIPTORS: Steel, *Casting, Quality control, *Steel castings.

Speith, K. G. and Bugeroth, A.
SURVEY OF THE PRESENT STATE OF THE CONTINUOUS CASTING OF STEEL AND ITS SCOPE. Dec 61.
Order from BISI £2 BISI-2384

Trans. of Tech[nische] Mitteilungen] (West Germany) 1961, v. 54, Feb, p. 80-82.

DESCRIPTORS: *Steel, Casting, *Cast steel.

Stark, V. B. and Nekrasov, N. K.
THE EFFECT OF MODIFICATION OF CAST IRON BY ADDITIONS OF 75% FERRO-SILICON ON ITS GRAPHITIZATION. [1961] 9p.
Order from ATS ATS-08N56R

Trans. of Liteinoe Proizvodstvo (USSR) 1954, no. 4, p. 18-22.

DESCRIPTORS: *Cast iron, Processing, Graphite compounds, Silicon compounds.

Turbovskii, M. M.
MODIFICATION OF CAST IRON BY ADDITIONS OF MOLTEN STEEL. [1961] 6p.
Order from ATS $8.40 ATS-07N56R

Trans. of Liteinoe Proizvodstvo (USSR) 1959, no. 3, p. 4-7.

DESCRIPTORS: *Cast iron, Processing, *Steel, Melting, Additives.

Turkenich, D. I. and Rostovtsev, S. T.
NON METALLIC INCLUSIONS IN BESSEMER RAIL STEEL. Dec 61.
Order from BISI £3 BISI-2541

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Metallurgiya] (USSR) 1961, no. 7, p. 62-66.

DESCRIPTORS: *Steel, Railroad tracks, Materials.

Ushijima, K.
MECHANISM OF INTERNAL CRACK FORMATION IN CONTINUOUS-CAST (STEEL) BILLETS, REPT. 4. Nov 61, 5100 words.
Order from HB $12.85 HB-5220

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 2, p. 116-124.

DESCRIPTORS: *Cast steel, Processing, *Steel castings, Castings, *Fracture (Mechanics), Stresses, Internal friction, Temperature.

Vrtel, J.
STEELS AND CAST IRONS WITH A HIGH BORON CONTENT. Nov 61.
Order from BISI £6 5s BISI-2461

Trans. of Hutn[icke] Listy (Czechoslovakia) 1960, v. 15, no. 12, p. 945-950.

DESCRIPTORS: *Steel, *Cast iron, *Boron, Alloys, Boron steel.

Wahlster, M. and Plöckinger, E.
INVESTIGATION OF THE FORMATION AND PRECIPITATION OF DEOXIDATION PRODUCTS. Nov 61.
Order from BISI £ 7 15s BISI-2485

Trans. of Techn[ische] Mitt[eilungen] Krupp (West Germany) 1960, v. 18, no. 2, p. 64-80.

DESCRIPTORS: *Steel, *Deoxidation.

Wepner, W.
PRESENT STATE OF RESEARCH ON THE AGING OF MILD STEELS. [1961] [49]p. (refs. 26 figs. 1 table omitted)
Order from SLA $4.60 61-20481

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1955, v. 26, no. 2, p. 71-98.

DESCRIPTORS: *Steel, Aging, Tensile properties, *Metallurgical analysis.

Wesemann, Friedrich.
WATER ECONOMY IN IRON AND STEEL WORKS UNDERTAKINGS. [1961] [21]p. 15 refs.
Order from SLA $2.60 61-18872

Trans. of mono. (lecture) to the main session, Jernkontorets Teknista Diskussionmote, 31 May 58.

DESCRIPTORS: *Iron industry, *Steel industry, *Water supplies, Economics, Industrial production.

Wiegand, H. and others.
EFFECT OF THE FRICTION MATES ON THE CONTACT BETWEEN SOLID BODIES DURING COLD-FORMING OPERATIONS. Dec 61.
Order from BISI £5 5s BISI-2363

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 6 July, p. 924-933.

DESCRIPTORS: *Austenite, *Steel, *Friction, Adhesion, Lubrication.

Structural Metallurgy and Corrosion

Boulanger, Christian.
STUDY OF INTERNAL FRICTION. II. EXPERIMENTAL TECHNIQUE. [1961] [19]p. (18 figs., refs. omitted).
Order from SLA $1.60 61-20498

Trans. of Revue de Métallurgie (France) 1949, v. 46, p. 321-329.

DESCRIPTORS: *Internal friction, Damping, Elasticity, Mathematical analysis, Stresses, Relaxation time, *Iron, *Steel, Nickel, Ferromagnetic materials, Metals, Structures, Oscillation, Excitation, Temperature, Vibration, High frequency, Measurement, Liquids.

Brovman, M. Ya. and Genzelev, S. M.
FORCES DURING THE DEFORMATION OF METAL IN BOX AND OVAL PASSES. Nov 61.
Order from BISI £3 10s BISI-2402

Trans. of Kuznechno-Shtampov[ochnoe Proizvodstvo] (USSR) 1960 [v. 2] no. 12, p. 5-9.

DESCRIPTORS: *Metals, Deformation.

Chernyavskaya, L. F. and Foit, I. F.
A COMPARISON OF METHODS FOR DETERMINING THE CORROSIVENESS OF MOTOR OILS. [1961] 4p.
Order from ATS $6.75 ATS-03N56R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 4, p. 70-72.

DESCRIPTORS: *Oils, *Corrosion.

Meerson, G. A. and others.
SOME HARD ALLOYS IN THE BORON-SILICON-CARBON SYSTEM. Nov 61, 1800 words.
Order from HB $4.90 HB-5354

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izvestiya: Met[allurgiya] i Toplivo, 1961, no. 4, p. 90-94.

DESCRIPTORS: *Boron alloys, *Silicon alloys, *Carbon alloys, Alloys, Hardness, Microstructure, Metallurgical analysis, Powder metallurgy.

Nowotny, H. and Wittmann, A.
STRUCTURE OF METALLOID-CONTAINING PHASES IN ALLOYS (Der Aufbau Metalloidhaltiger Phasen in Legierungen). [1961] [36]p. (foreign text included) 41 refs.
Order from SLA $3.60 61-20845

Trans. of Radex-Rundschau (Austria) 1957, no. 5/6, p. 693-707.

DESCRIPTORS: *Alloys, Metallurgical analysis, *Crystal structure, Phase studies, *X-ray analysis, Chemical analysis

The structure of most crystalline and intermediate metal-metalloid-phases known in alloys is discussed, keeping residue analysis in mind. After discussing the reasons for association of real metal phases with metalloid-containing phases in technical alloys and after discussing the general principles of isolation and separation, the structure chemical considerations are described, which are decisive for X-ray identification. (Author)

Ryzhikov, A. A. and others.
IMPROVED DENSITY AND STRUCTURAL UNIFORMITY OF CASTINGS (BY VIBRATION). Nov 61, 1800 words.
Order from HB $5.40 HB-4910

Trans. of Liteinoe Proizvodstvo (USSR) 1957, no. 5, p. 20-22.

DESCRIPTORS: *Castings, *Vibration.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Caldirola, P. and Fiocchi, R.
SEPARATION OF THE ISOTOPES OF URANIUM. CHAP. VII: METHODS FOR GAS SEPARATION OTHER THAN GASEOUS DIFFUSION [Separazione degli Isotopi dell' Uranio]. [1961] [28]p. 7 refs.
Order from SLA $2.60 61-18292

Trans. of [Centro di Studi Nucleari di Ispra, Comitato Nazionale per le Richerche Nucleari (Italy). Rapporto CNI-24, Sep 59] p. 145-163.
Complete translation is available from OTS $2.50 as AEC-tr-4171, 61-11146, Oct 60, 123p.

DESCRIPTORS: *Uranium, *Radioactive isotopes, Separation, Reactor fuels, Nuclear reactions, Costs, *Isotope separation.

Pshezhetskii, S. Ya.
EFFECT OF NUCLEAR RADIATION ON GASEOUS REACTIONS tr. by Helen Basil. [1961] 15p. 23 refs.
Order from OTS or SLA $1.60 AEC-tr-4622

DESCRIPTORS: Fission products, Particles, *Chemical reactions, *Gases, *Molecules, Excitation, *Exchange reactions.

Nuclear Engineering and Power

Dzhelepov, V. P. and Pontekorvo, B. M.
RESEARCH IN PHYSICS OF HIGH ENERGY PARTICLES AT THE SYNCHROCYCLOTRON OF THE LABORATORY OF NUCLEAR PROBLEMS OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH (Issledovaniya po Fizike Chastits Vysokikh Energii na Sinkhrotsiklotrone Laboratorii Yadernykh Problem Ob"yedinennogo Instituta Yadernykh Issledovanii). Oct 60 [30]p. (42 figs. omitted)
Order from OTS or SLA $2.60 AEC-tr-3592

Trans. of #Atomnaya Energiya (USSR) 1957, v. 3 [no. 11] p. 413-443.
Another trans. is available from PP $5.00

Portions of this report will not reproduce well.

DESCRIPTORS: *Nuclear physics, *Atomic energy engineering, Nuclear energy, *Particles, *Synchrocyclotrons, Nuclear physics laboratories

This survey of experimental research with high-energy particles covers the time at which the accelerator was put into operation to July 1957. (See also 60-22901)

Herreng, Ertaud, and Pasquet.
DESCRIPTION OF REACTORS G_2 AND G_3 (Description des Réacteurs G2 and G3). Feb 61, 41p.
Order from OTS $1.00 AEC-tr-4385

Trans. of Commissariat à l'Énergie Atomique (France) no. CEA-952.

DESCRIPTORS: Plutonium, Production, Graphite moderated reactors, Design, Cooling, Loading, Corrosion inhibition, Reactor fuels, Fuels, Uranium, Fuel elements, Reactor cores, Reactor coolants, *Reactor theory.

The novelty of the G2 and G3 reactors consists primarily in the design of the vessel for which prestressed concrete is used and also in the ability of the reactors to allow fuel loadings and unloadings to be performed while the reactors are in operation, placing the irradiated fuel elements in containers and sending them automatically to a storage pool. Circulation of the carbon dioxide gas is also solved in an original manner; two entrance and exit regions are included in order to ensure a better utilization of fuel. Although G2 and G3 are primarily plutonium producing reactors, they are provided with energy generating units. (Extracted)

Mialki, Werner.
THE SODIUM COOLING OF NUCLEAR REACTORS (Die Natriumkuhlung von Kernreaktoren). [1961] [29]p. 10 refs.
Order from SLA $2.60 61-20477

Trans. of Atomkernergie (West Germany) 1958, v. 3, no. 8/9, p. 321-328.

DESCRIPTORS: *Coolants, *Liquid metals, Liquid cooled, *Reactor coolants, Heat transfer, Physical properties, Thermal neutrons, Nuclear reactions, *Sodium graphite reactors, *Nuclear power plants, *Power reactors, Corrosion.

Taketani, Kiyoaki and Ichikawa, Michio.
ANALYSIS OF URANIUM FUEL ROD BY X-RAY INVERSE POLE FIGURE METHOD (I). [Pt.] 6 of Studies on Uranium Fuel Element. Aug 61, 14p. 4 refs.
Order from OTS $0.50 AEC-tr-4465

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2, no. 4, p. 190-195.

DESCRIPTORS: *Uranium, *Fuel rods, X-ray diffraction analysis, Fuel elements.

The 10-mm-diam metallic uranium rods which received beta treatment and thermal cycling were dimensionally unstable. An explanation is given on the basis of the relative inverse pole figures which were newly developed. The 680°C-quenched series, as compared with the 720°C-quenched series, retains the fiber structure which was created during the rolling, which constitutes one of the reasons for the dimensional instability. The same thing can be said of the 300°C-rolled series and the 600°C-rolled series. The heat treatment, which is given for the purpose of recrystallizing after beta-quenching, does not cause a basic change in the pole figure. Relative inverse pole figures can be used for the purpose of studying the dimensional instability of metallic uranium. (See also 60-21967)

PHYSICS

Kislov, V. Ya. and Bogdanov, E. V.
INTERACTION OF SLOW PLASMA WAVES WITH A STREAM OF ELECTRONS, tr. by R. P. Illwitzer. 22 Mar 61, 15p. 6 refs. APL/JHU TG 230-T220.
Order from OTS $0.50 61-31538

Trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 12, p. 1974-1985.
Another trans. is available from MDF $9.00 as MDF K-243 [1961] 16p.

DESCRIPTORS: *Plasma physics, *Electromagnetic waves, *Electron beams, Electrons, Magnetic fields, Intensity, Propagation

We have studied the interaction of a slow electron beam with a gyrotropic plasma and found that E- and H-waves are separated even in the presence of a magnetic field. A criterion for separation is derived. The dispersion equation of a plasma-beam system is obtained for E-waves in a finite magnetic field and has two solutions, which correspond to the two possible interaction mechanisms. In the first mechanism space charge waves are amplified as a result of deceleration of the electrons in the field of induced charges. In the second mechanism, the electron beam interacts with a retarded wave traveling through the plasma. Both space and surface waves can exist. The field amplitude of the space waves is maximum at the axis. The slow space waves have no counterpart in ordinary slow-wave structures. There are regions of both normal and anomalous dispersion for each of the two types. The features of interaction with a traveling wave are analyzed and the amplification factors are computed. Coupling impedances are calculated for both types of wave. Considerable signal amplification was achieved in experiments with both mechanisms. The experimental resluts are in good agreement with theory (Author)

Nowotny, H.
THE PROBLEM OF HIGH-MELTING MATERIALS (Zur Frage Hochschmelzender Stoffe). [1961] [42]p. (foreign text included) 29 refs.
Order from SLA $4.60 61-20839

Trans. of Plansee Seminar 'de re Metallica'. Plansee Proceedings (Austria) 1958, v. 3, p. 23-37.

DESCRIPTORS: *Melting, Sublimation, Evaporation, Phase transitions, Lattices, Thermodynamics, Mathematical analysis, Hyperfine structure, Metallic crystals, Molecular association, *Solid state physics, Semi-conductors, High temperature research, Thermal stresses.

Acoustics

Enkel, Fritz.
THE INFORMATIVE CONTENT OF THE CONSONANTS (Über den Informationagehalt der Geräuschlaute) tr. by Claudius F. Mayer. [1960] [17]p. 12 refs. H 4627 A.
Order from OTS or SLA $1.60 60-17630

Trans. of [NTZ] Nachrichtentechnische Zeitschrift (West Germany) 1956, v. 9, no. 11, p. 493-498.

DESCRIPTORS: Language, *Speech, Information theory, Philology, *Speech transmission, Intelligibility, Sound, Acoustics, Communications theory, Spectrographic analysis.

Experiments showed that the informational contents of the unvoiced consonants is given first of all by their envelope curve. By imitation on models it could be determined in what range the character of these sounds is determined by the envelope. With these sounds even the spectral distribution of the chromatic noise is of significance. In the informative part of the speech, the same information is contained several times, which is called redudancy. This phenomenon can be ascertained similarly in case of separate speech sounds; they remain intelligible even then when broad bands of frequency are cut away. In spite of their considerable frequency range, consonants can be still recognized from small residual spectra. (Extracted)

Krächter, Hans.
A NEW METHOD OF MEASURING COMPRESSIVE FORCES WITH ULTRASONICS. [1961] [9]p. 2 refs.
Order from SLA $1.10 61-18411

Trans. of Werkstatt und Betrieb (West Germany) 1958, v. 91, no. 5, p. 246-248.

DESCRIPTORS: *Ultrasonics, *Compressometers, Tests

A new method and the relevant equipment is described, for the measurement of compressive forces with ultrasonic means. When two absolutely parallel polished plates are pressed together, the layer between them is partly permeable to ultrasonic waves. From this it has been established that the extent of the ultrasonic energy passing through or reflected on the dividing layer is, under certain conditions, proportional to the pressure applied. This relationship can be used to measure compressive forces of unknown strength. (Author)

Electricity and Magnetism

Shelepin, E. I., Sobolevskii, K. M., and Baranetskii, V. S.
SHIELDING A GYROSTABILIZER WHICH IS A SOURCE OF ELECTROMAGNETIC INTERFERENCE. 17 Aug 61 [10]p. 3 refs. MCL-1304/1+2.
Order from OTS or SLA $1.10 61-28696

Unedited rough draft trans. of Avtomaticheskii Kontrol' I Izmeritel 'naya Tekhnika (USSR) 1960, no. 4, p. 102-108.

DESCRIPTORS: *Gyro stabilizers, Interference, Shielding, *Electromagnetic shielding.

Zotov, T. D.
TEMPERATURE FUNCTION OF ELECTRICAL RESISTANCE OF A MONOCRYSTAL OF MAGNETITE, COOLED IN A MAGNETIC FIELD BELOW ITS LOW TEMPERATURE CONVERSION. 1 June 61, 2p. 4 refs. H-8691; JPRS (R-1616-D).
Order from OTS $0.50 61-31562

Trans. of unidentified article from unknown Russian-language source, n. d.

DESCRIPTORS: *Single crystals, *Magnetite, Temperature, Electrical properties, Resistance, Magnetic fields

Natural monocrystals of magnetite from the Ural deposit Kosoy-Brod were cooled from room temperature to 63.5°K. These monocrystals contain 71.00% iron, 0.1 to 0.3% titanium, and traces of other elements.) The cooling was done in fields of 1900 ergs along the axis of the crystal, fields of 14,600 ergs perpendicular to the axis (i.e., along the (010) axis), and no fields. After cooling in the fields the samples became demagnetized. Electrical resistance was measured during subsequent warming, from 63.5°K to room temperature, without a field. Anisotropy was observed only below the temperature of conversion. From 112.3° to 111.0°K the resistance changed 14.5, 18.0, and 21.5 times respectively for $\rho_{\parallel}$, ρ_{o}, and $\rho_{\perp}$. At 91°K there was a slight break in the curves. The maximum of the ratio of $\rho_{\perp}/\rho_{\parallel}$ occurred at 93°K. Results indicate that anisotropy of electrical resistance depends upon the method of cooling and the presence of the maximum of the ratio $\rho_{\perp}/\rho_{\parallel}$. The regulation of divalent and trivalent ions in octahedral internodes of magnetite occurs in a very narrow temperature range.

Molecular Physics and Spectroscopy

Gerding, H. and Nijveld, W. J.
POLARIZATION MEASUREMENTS OF RAMAN LINES IN LIQUID SULFUR TRIOXIDE (Polarisationsmessingen der Ramanlinien des Fluessigen Schwefeltrioxyds). [1961] 19p. 25 refs.
Order from SLA $1.60 61-20540

Trans. of Recueil des Travaux Chim[iques] d[es] Pays-Bas (Netherlands) 1940, v. 59, p. 1206-1219.

DESCRIPTORS: Liquids, *Sulfur compounds, *Oxides, *Raman spectroscopy, Polarization, Measurement, Polymers.

Hampl, Gilbert.
THE SPECTRUM, SEEN AND PHOTOGRAPHED BY AN AMATEUR. [1961] 11p.
Order from STT $5.00 STT-127-337

Trans. of STZ [sic] 1960, no. 52, p. 1085-1089.

DESCRIPTORS: *Photography, *Spectrophotometers.

Kuroda, Y. and Ito, K.
MOLECULAR ORBITAL TREATMENT OF METAL COMPLEX COMPOUNDS. I. MODIFIED SLATER-TYPE WAVE FUNCTIONS FOR TRANSITION ELEMENTS. II. IONIZATION POTENTIAL, ELECTRON AFFINITY, AND ELECTRONEGATIVITY OF TRANSITION ELEMENTS. III. ELECTRONIC STATE OR COMPLEX SALTS OF $[M(NH_3)_6]^{n+}$ TYPE. [1961] [22]p. 26 refs.
Order from SLA $2.60 61-20490

Trans. of [Nihon Kagaku Zasshi] (Japan) 1955, v. 76, [no. 5] p. 545-548 and [no. 7] p. 762-770.

DESCRIPTORS: *Metallic compounds, *Complex compounds, *Transition elements, Salts, *Ionization potentials, *Atomic orbitals

The effective principal quantum number, the effective nuclear charge, and the shielding constant of each orbital were modified so as to bring energy levels and orbital radii into good agreement with those from atomic spectra and those calculated from Hartree's method, respectively. As a result, the principal quantum number of 3d was calculated to be about 2.0; the overlap integrals $s(2d_x2\text{-}_z2,$ 2s, p, pt) and $s(2d_x2\text{-}_z2,$ $2p_x$, p, pt) involving these were calculated by the method of Mulliken. Ionization potentials and electron affinities in transition metal elements were calculated by using the effective principal quantum numbers, the effective nuclear charges, and the shielding constants. By using the ionization potential and the electron affinity thus obtained, the electronegativity was calculated according to the equation of Mulliken. In order to elucidate the cause of the formation of absorption bands specific to inorganic complex salts and their magnetic property, the electronic state of hexacoordinated complex salts of regular octahedron type was calculated by using the linear combination of atomic orbitals proximate calculation method. Bonds between metal and ligand are stable in the so-called complex salts of covalent type.

Santo, I. and Gal, K.
GRAFTING OF VARIOUS MONOMERS TO POLY(VINYL ALCOHOL) FILMS UNDER THE ACTION OF X-RAYS. [1961] 3p.
Order from ATS $4.00 ATS-92N54R

Trans. of Vysokomolukelyarnye Soedineniya (USSR) 1960, v. 2, no. 4, p. 546-548.

DESCRIPTORS: *Monomolecular films, Vinyl alcohol, Alcohols, Films, Preparation, X-rays.

Optics

Bachmann, L. and Sitte, P.
THE DETERMINATION OF THE THICKNESS ULTRATHIN SECTION BY THE TOLANSKY METHOD. [1961] [30]p. 41 refs.
Order from SLA $2.60 61-20098

Trans. of Mikroscopie (Austria) 1959, v. 13, p. 289-304.

DESCRIPTORS: *Electron microscopes, Thickness, Determination, Interference, Colors, *Electron beams, Focusing, Light transmission, Photographic materials, *Thin films, Production, Reflection.

Ultrathin sections floated on a water surface show in reflected light interference colors which depend on their thickness. The series of interference colors appearing in sections of increasing thickness has been determined. The corresponding thickness has been measured by the multiple beam interference method. In this way the authors could establish a relation between interference colors and thickness of the sections up to 5000 Å. A series of colors, very similar to that one observed in thin sections, can be produced between crossed Nicols by the Berek compensator, and the retardation can be determined for each corresponding color. The thickness of the sections calculated according to their interference color has been found in excellent agreement with the results of the Tolansky method. (Author)

Braucks, F. W.
IMPROVEMENT OF THE TELE-FOCUS CATHODE DEVELOPED BY STEIGERWALD THROUGH INSTALLATION OF AN ADDITIONAL ELECTRODE. [1961] [12]p. 5 refs.
Order from SLA $1.60 61-20717

Trans. of Optik (West Germany) 1959, v. 16, no. 5, p. 304-312.

DESCRIPTORS: Electron microscopes, *Electron beams, *Cathodes, Electrodes, Design

By including an auxiliary electrode in the direct focusing system developed by Steigerwald it is possible to, increase the intensity of the directed beam and to change the distance of the smallest beam cross section from the emittor by varying the potential on the auxiliary electrode. The effect of the essential values of the design dimensions upon the current density and the intensity of the directed beam are determined. In a brief discussion a comparison is made between the results of the improved system and those obtained with the original emittor. (Author)

Diemer, G. and Santen, J. G. van.
NEW APPLICATIONS OF ELECTRO-OPTICAL PHENOMENA. [1961] 17p.
Order from ATS $25.70 ATS-91N53DU

Trans. of Ned[erlands] Tijdschr[ift voor] Natuurk[unde] 1959, v. 25, no. 10, p. 265-287.

DESCRIPTORS: *Optics, Electrical effects.

Jahn, W.
INVESTIGATIONS OF THE SHAPE OF TRANSMITTANCE CURVES OF X- AND GAMMA-IRRADIATED GLASSES. [1961] 9p.
Order from ATS $17.95 ATS-63N55G

Trans. of Zeiss Mitt[eilungen über Fortschritte der Technischen Optik] (West Germany) 1958, v. 1, no. 6, p. 199-211.

DESCRIPTORS: *Glass, X-ray diffraction analysis, Optical analysis, *Optical glass, *X-rays, *Gamma rays, Transmission.

Karpeev, G. A.
USE OF A TWO-ELEMENT INTERFEROMETER TO INVESTIGATE WAVE FIELD FLUCTUATIONS. [1961] 10p. 2 refs. MDF K-252; AFCRL-397; AD-262 519.
Order from OTS or SLA $1.10 62-13620

Trans. of #Radiotekh[nika] i Elektr[onika] (USSR) 1961, v. 6, no. 3, p. 355-362.

DESCRIPTORS: *Radio interferometers, Radio waves, Radio signals, Signals, Interferometers

A theoretical estimate is presented of the fluctuations at the output of a two-element interferometer loaded by a squared detector. The dependence of the character of the output signal fluctuations on the spatial correlation properties of the amplitude-phase fluctuations of the field and also its regular characteristics are investigated. (Author)

Klimishin, I. A.
ON THE THEORY OF NONSTATIONARY LIGHT SCATTERING. [1961] 10p. 5 refs. MDF K-249; AFCRL-353; AD-262 518.
Order from OTS or SLA $1.10 62-13618

Trans. of Ukr[ayins'kyi] Fiz[ychnyi] Zh[urnal] (USSR) 1960, v. 5, no. 5, p. 620-627.

DESCRIPTORS: *Light, Scattering, Theory, Shock waves, Analysis, Gas flow, Upper atmosphere, Probability, Velocity, Differential equations, Integral equations, Functions, Quantum mechanics, Integral transforms, Thermal radiation

Equations and solutions are obtained for the probability that a light quantum will leave a medium with a moving boundary at the side of the medium, and for the probability that a quantum will leave the medium if the boundary of the medium moves.

Korshunov, V. A. and Skrotskii, G. V.
ON THE QUESTION OF THE DOPPLER EFFECT IN THE THEORY OF VAVILOV-CHERENKOV LUMINESCENCE. [1961] 5p. 8 refs. MDF K-251; AFCRL-395; AD-262 416.
Order from OTS or SLA $1.10 62-13619

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 4, p. 56-59.

DESCRIPTORS: *Luminescence, Theory, Cerenov radiation

A geometric interpretation of the Vavilov-Cherenkov phenomenon is analyzed which is convenient for a clarification of the peculiarities of the Doppler effect in this case. (Author)

Solid State Physics

SIMPLE PROCESS FOR CANNING SEMICONDUCTOR ELEMENTS USING A GLASS STEM AND A GLASS BULB. 10 Oct 61.
Order from WBI

Trans. of published Japanese patent 36-16969, Sep 61, by Sony Corp.

DESCRIPTORS: *Semiconductors, *Glass, Patents, Japan, *Encapsulation.

USSR WORK ON SEMICONDUCTORS. 26 May 61 [219]p. 584 refs. JPRS: 9293.
Order from OTS or SLA $14.50 61-23009

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 5, p. 482-492, 498-543, 553-557, 562-582.
##Other translations are available elsewhere.

DESCRIPTORS: *Semiconductors, Chemistry, Design, Chemical reactions, Electrons, Dyes, Photoelectric materials, Polymers, Plastics, High temperature research, Diamonds, Surfaces, Germanium, Silicon, Adsorption, Crystal structure, Lattices, Glass, Radioactivation analysis, Dielectrics, Refractory materials, Temperature, Heat resistant alloys, Thermocouples, Chemical analysis, Phase studies, Surface properties, Analysis, *Solid state physics.
Contents:
The chemistry of semiconductors and electron mechanisms of chemical reactions, by S. Z. Roginskii
Organic dyestuffs-semiconductors and their photoelectric characteristics, by A. N. Terenin
##The semiconductor properties of polymer materials, by V. A. Kargin and others
##New high-temperature semiconductors and their application, by G. V. Samsonov
##The chemistry of diamond-like semiconductors, by N. A. Goryunova
##Chemical reactions on the surface of germanium, silicon, and their electronic analogues, by O. V. Krylov and V. M. Frolov
##Vitreous semiconductors, by B. T. Kolomiets
##Physicochemical analysis of semiconductors, by N. P. Luzhnaya
Radioactivation analysis of pure materials and prospects of its development, by V. I. Baranov and others
Physicochemical problems of dielectrics, by A. A. Vorob'ev and others.

Alexander, Helmut.
PLASTIC DEFORMATION OF GERMANIUM SINGLE CRYSTALS. [1961] 15p. 39 refs.
Order from SLA $1.60 62-10079

Trans. of Z[eitschrift für] Metallkunde (West Germany) 1961, v. 52, no. 5, p. 344-352.
Another trans. is available from ATS $28.25 ($3.95) as ATS-14N55G [1961] 15p.

DESCRIPTORS: *Germanium, *Single crystals, *Deformation, Plastic flow.

The entire stress-strain curve of germanium single crystals was determined during tensile experiments in the temperature range of 470 to 800°C and at elongation rates varying over three orders of magnitude. Qualitatively, marked agreement was found with the behavior of face-centered cubic metals, particularly in the presence of three strain-hardening regions and for the temperature-dependent increase of the region of marked strain hardening, which indicates that there is an elastic interaction of dislocations as the mechanism of strain-hardening. In contrast to metals, however, the critical shear stress of germanium depends exponentially on the temperature. This temperature dependence, together with the measured rupture stress, explains the brittle-ductile transition up to two thirds of the melting point. A mechanism similar to friction is discussed in connection with the motion of dislocations in germanium. The marked increase in the elastic limit with initial deformation is believed to be caused by the initial lack of slip-susceptible dislocations, and the milder increase in the elastic limit for repeated deformations is believed to be caused by a blocking of dislocations by impurity atoms. (Author)

Alexander, H.
PLASTIC DEFORMATION OF GERMANIUM SINGLE CRYSTALS. [1961] 15p.
Order from ATS $28.25 ($3.95) ATS-14N55G

Trans. of Z[eitschrift fur] Metallkunde (West Germany) 1961, v. 52, no. 5, p. 344-352.

DESCRIPTORS: *Germanium, *Single crystals, *Deformation, Plastic flow.

Feofilov, P. P.
ABSORPTION AND LUMINESCENCE OF DIVALENT RARE-EARTH IONS IN CRYSTALS OF ARTIFICIAL AND NATURAL FLUORITE. [1960] 9p. 9 refs.
MDF F-127.
Order from OTS or SLA $1.10 62-15205

Trans. of Optika i Spektr[oskopiya] (USSR) 1956, v. 1, no. 8, p. 992-999.

DESCRIPTORS: *Fluorspar, Single crystals, *Rare earth elements, Samarium, Europium, Ytterbium, Absorption, Luminescence, *Optics

The absorption and luminescence spectra and also the temperature quenching and the contraction of the duration of the excited state of artificial fluorite (CaF_2) single crystals containing divalent samarium, europium and ytterbium ions have been investigated. The role of divalent rare-earth elements in the formation of the colors and luminescence of natural fluorite has been clarified. Considerations are expressed on the character of the electronic transitions in divalent rare-earth ions. (Author)

Nowotny, H., Auer-Welsbach, Helga and others.
A CONTRIBUTION TO THE STRUCTURE OF Mn_5Si_3 ($D\,8_8$-Type) (Ein Beitrag zur Mn_5Si_3-Struktur ($D\,8_8$-Typ). [1961] [11]p. (foreign text included) 15 refs.
Order from SLA $1.60 61-20837

Trans. of Monatshefte fur Chemie (Austria) 1959, v. 90, no. 1, Sonderabdruck, p. 15-23.

DESCRIPTORS: *Manganese compounds, *Silicides, Single crystals, Crystal structure.

The parameters of the $D\,8_8$ structure were determined again by well shaped, single crystals of the Ti_5Si_3 type. Zr_5Al_3 crystals-isotype thereto--were traced in the system Zr-Al. In cutting sections of Ti_5Sn_3-Zr_5Sn_3 an unbroken region of mixture crystals of $D8_8$ type appears; in those of Zr_5Pb_3-Ti(5)Pb(3), a very extended region of the same type of mixture crystals occurs. (Author)

Stourac, Ladislav.
INFLUENCE OF AGEING ON CHANGE IN ELECTRICAL PROPERTIES OF SEMICONDUCTING SYSTEMS Bi_2Te_3-Bi_2Se_3 (Vliyanie Stareniya na Elektricheskie Svoistva Poluprovodnikovoi Sistemy Bi_2Te_3-Bi_2Se_3). [1961] [12]p. (foreign text included) 16 refs.
Order from SLA $1.60 61-20882

Trans. in manuscript of [Chekhoslovatskii Fizicheskii Zhurnal] 1959, v. 9, p. 717-720.

DESCRIPTORS: Bismuth compounds, Tellurides, Selenides, *Semiconductors, Aging, Electrical properties.

Theoretical Physics

Ginzburg, V. L.
ON THE CONSERVATION LAW AND EXPRESSION FOR THE ENERGY DENSITY IN THE ELECTRODYNAMICS OF ABSORBING AND DISPERSING MEDIA. [1961] 20p. 8 refs. MDF G-205; AFCRL-533; AD-262 418.
Order from OTS or SLA $1.60 62-13623

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1961, v. 4, no. 1, p. 74-89.

DESCRIPTORS: *Electromagnetic theory, Energy, Density, *Plasma physics, *Wave transmission

The question is discussed of the energy conservation law in electrodynamics and the expression for the energy density in the case of an absorbing dispersing medium. Phenomenological expressions are compared with the results obtained for a plasma when a kinetic equation is used and also a motion equation for a mechanical model with friction. The question of the rate of signal propagation in an absorbing medium is touched upon briefly. (Author)

Tkalich, V. S.
INVESTIGATION OF A SYSTEM OF MAGNETO-HYDROMECHANIC EQUATIONS. [1959] 3p. 6 refs. MDF T-135.
Order from OTS or SLA $1.10 62-15385

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Mekh[anika] i Mash[inostroenie] 1959, no. 4, p. 134-135.

DESCRIPTORS: *Magnetohydrodynamics, Fluid flow, Hydrodynamics, Vector analysis, Fluid mechanics, *Differential equations

The system of equations of ideal magnetohydromechanics (hydrodynamics of an incompressible fluid), as written in the absolute Gaussian system of units (Uspekhi Fiz. Nauk 62: 247-303, 1957; available in translation as 59-20326), is rewritten for the stationary case $\partial/\partial t = 0$. The system $w \equiv (v^2/2) + (p/\rho) + F$, where ρ represents the density, p the pressure, and F the potential of the external forces of an incompressible fluid, is investigated in an arbitrary (q_1, q_2, q_3) orthogonal coordinate system. The study is limited to the 2-parameter case $(\partial/\partial q_2) = 0$ by generalizing the method of I. S. Gromeka (Collected Works, in Russian, IAN, Moscow, 1952).

Thermodynamics

Ariya, S. M., Vol'f E. and Grossman, G.
CHIMIE DES SUBSTANCES DE COMPOSITION VARIABLE. III. SUBSTANCES DE COMPOSITION VARIABLE ET LOI PÉRIODIQUE, tr. by De Trezvinsky. 29 Dec 59 [11]p. 5 refs. CEA Trans. no. R 797.
Order from OTS or SLA $1.60 61-15767

Trans. in French of *Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1956, v. 26, p. 2102-2106.

DESCRIPTORS: Chemical properties, *Thermodynamics, *Molecular isomerism, Metallic compounds, Sulfur, Iron compounds, Manganese compounds, Selenium compounds, Tellurium compounds.

Grishin, A. P.
CALCULATION OF THE ACTIVITY OF HYDROCARBON AND OTHER SOLUTIONS FROM THE THERMODYNAMIC PROPERTIES OF THE PURE COMPONENTS ON THE BASIS OF ULTRAACOUSTIC DATA. [1961] 6p.
Order from ATS $9.15 ATS-88N55R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 5, p. 111-116.

DESCRIPTORS: *Hydrocarbons, Solutions, Thermodynamics, Acoustics, Data.

Predvoditelev, Aleksandr Savvich, and others.
CHARTS OF THERMODYNAMIC FUNCTIONS OF AIR (FOR TEMPERATURES OF 1000 TO 12,000° K AND PRESSURES OF 0.001 TO 1000 ATMOSPHERES) Book 3 of Thermodynamic Properties of Air at 1000 to 20,000°K and 0.001 to 1000 Atm. 1962, 56p.
Order from ATS $6.50, set of 3/$38.25

Trans. of mono. [Termodinamicheskie Funktsii Vozdukha dlya Temperatur ot 1000 do 12,000° K i Davlenii ot 0,001, do 1000 Atm (Grafiki Funktsii) Moscow, 1960, 53p.]

DESCRIPTORS: *Air, *Thermodynamics, Temperature charts

Contents:
Description of Tables
Approximate Method for the Computation of Air Parameters Behind a Normal Shock

Pressure Ratios vs. M	Specific Internal Energy vs. T
Enthalpy Ratios vs. M.	Specific Entropy vs. T
Specific Enthalpy vs. T	c_p vs. T
Molecular Weight vs. T	c_v vs. T
Velocity of Sound vs. T	h vs. s

Predvoditelev, A. S., Stupochenko, E. V. and others.
TABLES OF THERMODYNAMIC FUNCTIONS OF AIR (FOR TEMPERATURES OF 6000 TO 12,000° K AND PRESSURES OF 0.001 TO 1000 ATMOSPHERES). Book 2 of Thermodynamic Properties of Air at 1000 to 20,000° K and 0.001 to 1000 Atm. 1962, 302p.
Order from ATS $21.75, set of 3/$38.25

Trans. of mono. [Tablitsy Termodinamicheskikh Funkstii Vozdukha dlya Temperatur ot 6000° do 12,000° K i Davlenii ot 0,001 do 1000 Atmosfer, Moscow, 1957, 301p.]

DESCRIPTORS: *Air, *Thermodynamics, Tables, Functions

Contents:
Description of Tables
Tables of h, u, s, μ, c_p, c_v, γ and a
Tables of x_N, x_O, x_{Ar}, x_{N_2} x_{O_2}, x_{NO}, x_{N^+}, x_{O^+}, x_{Ar^+}, $x_{N_2^+}$, $x_{O_2^+}$, x_{NO^+}, x_e, and ρ.

Predvoditelev, A. S., Stupochenko, E. V. and others.
TABLES OF THERMODYNAMIC FUNCTIONS OF AIR (FOR TEMPERATURES OF 12,000 TO 20,000° K AND PRESSURES OF 0.001 TO 1000 ATMOSPHERES). Book 1 of Thermodynamic Properties of Air at 1000 to 20,000°K and 0.001 to 1000 Atm. 1962, 230p.
Order from ATS $16.50, set of 3/$38.25

Trans. of mono. [Tablitsy Termodinamicheskikh Funktsii Vozdykha dlya Temperatur ot 12,000 de 20,000°K i Davlenii ot 0,001 do 1000 Atmosfer, Moscow, 1959]

DESCRIPTORS: *Air, *Thermodynamics, Tables, Functions

Contents:
Description of Tables
Tables of h, u, s, μ, c_p, c_v, γ and a for Air
Tables of x_N, x_O, x_{Ar}, x_{N^+}, x_{O^+}, x_{Ar^+}, x_{N_2}, x_{O_2}, x_{NO}, $x_{N^{++}}$, $x_{O^{++}}$, $x_{Ar^{++}}$, x_e, ρ and q^2 for Air
Tables of S, U, and C_v for the Air Components N, O, Ar, N+, and Ar+
Includes insert.

Timrot, D. L. and Borisoglebskii, V. P.
DETERMINING THE DENSITY OF LIQUID OXYGEN WITHIN A WIDE RANGE OF TEMPERATURES AND PRESSURES (ABSTRACT). 17 Aug 61 [2]p.
MCL-1258/1+2.
Order from OTS or SLA $1.10 61-28694

Unedited rough draft trans. of Teploenergetika (USSR) 1960 [v. 7] no. 10, p. 95.

DESCRIPTORS: *Oxygen, *Liquefied gases, Density, Determination, Temperature, Pressure, Low temperature research.

Turovtseva, Z. M. and Kunin, L. L.
ANALYSIS OF GASES IN METALS. Nov 61, approx. 390p.
Order from CB $21.50

Trans. of mono. [Analiz Gazov v Metallakh, Moscow, 1959].

DESCRIPTORS: *Gases, Hydrogen, Oxygen, Nitrogen, Determination, *Metals, *Thermodynamics, Metallurgical analysis, Vacuum systems, Adsorption.

Wave Propagation

Bass, F. G.
ON THE THEORY OF COMBINATION SCATTERING OF WAVES ON A ROUGH SURFACE. [1961] 12p. 8 refs. MDF B-185; AFCRL-511; AD 262 417.
Order from OTS or SLA $1.60 62-13624

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1961, v. 4, no. 1, p. 58-66.

DESCRIPTORS: *Wave transmission, *Electromagnetic waves, Scattering, *Acoustics, Dielectrics, Mathematical analysis.

Combination scattering of electromagnetic and acoustic waves by rough surfaces is analyzed. An expression for the intensity of scattered electromagnetic waves is obtained in a form suitable for any nature of surface roughness. Besides the intensity of the scattered radiation, its frequency spectrum is also investigated. It is shown that a combination scattering effect, analogous to the Mandel'shtam-Raman effect, occurs during scattering on a time-varying surface. The problem formulated is a particular case of the more general problem of the radiation of waves by currents flowing on the surface of a substance with arbitrary dielectric permeability.

Vsekhsvyatskaya, I. S. and Tsedilina, E. E.
CORRELATION FUNCTION OF THE AMPLITUDES OF SIGNALS SCATTERED FROM AN ABSOLUTELY ROUGH SCREEN. [1961] 6p. 7 refs. MDF V-158; AFCRL-570; AD-262 421.
Order from OTS or SLA $1.10 62-13626

Trans. of [Nauchno-Issledovatel'skii Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln]. Trudy (USSR) 1960, v. 17(27) p. 287-291.

DESCRIPTORS: *Ionospheric propagation, *Electromagnetic waves, Reflection, *Statistical functions, Propagation, Functions.

The correlation function of the amplitudes of signals reflected from the ionosphere is calculated taking into account both random and directed motion in the ionosphere. It is shown that the correlation function for an absolutely rough ionosphere is the product of autocorrelation functions obtained in two limiting cases: when there is only drift or purely random motion of the scattering centers. (Author)

Zinichev, V. A., Ryzhov, Yu. A., and Yudin, O. I.
METHOD OF INVESTIGATING RADIOWAVES IN THE TROPOSPHERE UNDER LARGE ANGLES. [1961] 3p. 3 refs. MDF Z-135; AFCRL-396; AD-262 415.
Order from OTS or SLA $1.10 62-13622

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1961, v. 4, no. 1, p. 177-178.

DESCRIPTORS: *Radio waves, Atmosphere, Propagation, *Radio transmission, Angle of arrival, Refraction, Refractive index.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

CURRENT REVIEW OF THE SOVIET TECHNICAL PRESS, 6-27 Oct 61. [1961] 4 nos.
Order from OTS $7.00/6 mos. 60-21441(74-77)

Contains reviews in English of Soviet press articles.

DESCRIPTORS: *Industrial research, *Scientific research

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING, NO. 38. 19 Sep 61, 72p. JPRS: 10576.
Order from OTS $2.00 62-11077

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 1 (6 reports).

DESCRIPTORS: Data, Processing, *Machine translation, Language, Vocabulary

Contents:
Certain theories of formal morphology, by I. L. Bratchikov
On the structure of information for machine translation, by I. L. Bratchikov and others
Formal determination of types coordination (und and oder) by A. R. Belopol'skaya and others
Identification of configurations in the Russian sentence, by G. S. Tseitin and L. N. Zasorina
Establishment of syntactic connections in machine translation by the Ajdukiewicz-Bar-Hillel method and in terms of configuration analysis, by I. I. Revzin

The construction of a formal morphology in connection with machine translation, by S. Ya. Fityalov.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING, NO. 53. 1 Nov 61, 43p. JPRS: 10814.
Order from OTS $1.25 62-11076

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 5 (2 reports).

DESCRIPTORS: Data, Processing, *Machine translation, Language, Vocabulary.

Contents:
One method for describing word combinations of standardized Russian, by Z. M. Volotskaya
Certain aspects of the characteristic of valences, by B. M. Leikin.

SCIENCE IS CLOSELY RELATED TO EVERYDAY PRACTICE. 2 Nov 61 [6]p. JPRS: 10900.
Order from OTS or SLA $1.10 62-13368

Trans. from Kazakhstanskaya Pravda (USSR) 1961, no. 172, p. 1.

DESCRIPTORS: *Science, Scientific organizations, Conferences, USSR.

Behlendorff, Erika and Kappl, Franz.
CALL DISTRIBUTION IN LARGE DIAL PRIVATE BRANCH EXCHANGES (Anrufverteilung in Grossen Wählt-Nebenstellenanlagen). [1961] [14]p.
Order from SLA $1.60 61-18265

Trans. of Siemens-Zeitschrift (West Germany) 1959 [v. 33] no. 12, p. 763-766.

DESCRIPTORS: *Multichannel telephone systems, *Panel boards (Electricity), Automatic, Operation, Design

Fyodorov, Evgeni.
SOVIET SCIENCE TODAY AND TOMORROW. [1961] 4p.
Order from OTS or SLA $1.10 62-13856

Russian press release (newspaper interview by Novosti Press Agency (APN)) n.d.

DESCRIPTORS: Science, *Scientific intelligence, USSR.

Zarobyan, Ya. N.
FOR THE INDISSOLUBLE CONNECTION OF SCIENCE AND LIFE. 25 Oct 61 [11]p. JPRS: 10763.
Order from OTS or SLA $1.60 62-13254

Trans. from Kommunist, Erevan (USSR) 1961, no. 174(8264) p. 2.

DESCRIPTORS: *Science, Scientific intelligence, Communism, Growth, USSR.

SOCIAL SCIENCES

GERMAN LAW ON INVENTIONS BY SALARIED PERSONNEL [?] EFFECTIVE 1 Oct 57. [1961] 9p.
Available on loan from SLA 62-10069

Trans. of unidentified article, Bonn, 25 July 57.

DESCRIPTORS: *Inventions, Patents, Germany.

RECENT MEETINGS IN THE USSR ON EDUCATION. 30 Aug 61, 19p. JPRS: 10030.
Order from OTS $0.50 61-31597

Trans. of Sovetskaya Pedagogika (USSR) 1961 [v. 25] no. 4, p. 151-160.

DESCRIPTORS: *Education, Labor, *Training, *Instructors, Psychology, Propaganda

Contents:
General meeting of the Academy of Pedagogical Sciences of the RSFSR
Conference on the Psychology of Labor Education and Instruction, by T. Kudryavtsev
Seminar-conference on pedagogical propaganda, by T. Polozova

Treves, Renato.
CONSIDERATIONS CONCERNING THE SOCIOLOGY OF LAW (Considerazioni Intorno Alla Sociologica Giuridica). [1961] 16p. 26 refs.
Order from SLA $1.60 61-18624

Trans. of Rivista Trimestrale di Diritto e Procedura Civile (Italy) 1960 [v. 14] p. 169-177.

DESCRIPTORS: *Political science, *Sociology, Theory.

This essay is intended for the collection of literature in honor of Luis Legaz y Lacambra, professor of the University of Santiago de Compostela. (Author)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5061
Rumyantsev, Aleksandr Vasil'yevich
MANUFACTURE OF CAMOIDS(Tekhnologiya izgotovleniya konoidov) Leningrad, Sudpromgiz, 446p. 1960. 4,200 copies printed. 4p.

BR-SOV/5237
Nichiporenko, Sergey Petrovich
BASIC PROBLEMS OF THE THEORY OF PROCESSING AND MOLDING CERAMIC MATERIALS(Osnovnyye voprosy teorii protsessov obrabotki i formovaniya keramicheskikh mass) Kiyev, Izd -vo AN UkrSSR, 1960. 109p. 2,000 copies printed. 3p.

BR-SOV/5256
Gerasimov, Valentin Vladimirovich, ed.
CORROSION OF NUCLEAR-REACTOR MATERIALS; A COLLECTION OF ARTICLES(Korroziya reaktornykh materialov; sbornik statey) Moscow, Atomizdat, 1960. 284p. 3,700 copies printed. 4p.

BR-SOV/5285
Demidovich, Boris Pavlovich, and Isaak Abramovich Maron
PRINCIPLES OF COMPUTING MATHEMATICS(Osnovy vychislitel'noy matematiki) Moscow Fizmatgiz, 1960. 659p. 25,000 copies printed. 8p.

BR-SOV/5300
Pigulevskiy, Yevgeniy Dmitriyevich
ULTRASONIC MICROSCOPY; VERBATIM REPORT OF A LECTURE(Ul'trazvukovaya mikroskopiya stenogramma lektsii) Leningrad, 1959. 23p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Seriya: Kontrol'kachestva produktsii) 6,500 copies printed. 1p.

BR-SOV/5323
Bannyy, Nikolay Pavlovich, and others
ECONOMICS OF FERROUS METALLURGY IN THE USSR(Ekonomika chernoy metallurgii SSSR) Moscow, Metallurgizdat, 1960. 566p. Errata slip inserted. 5,700 copies printed. 8p.

BR-SOV/5324
Polonskiy, Vladimir Ivanovich, and Abram Borisovich Khaykin
ELECTRICALLY PROPELLED SHIPS AND THE PROSPECTS FOR THEIR DEVELOPMENT(Elektrokhody i perspektivy ikh razvitiya) Leningrad, Sudpromgiz, 1960. 499p. 2,300 copies printed. 4p.

BR-SOV/5347
Baranov, Anatoliy Timofeyevich, and Grigoriy Abramovich Buzhevich
CINDER CONCRETE, POROUS AND SOLID(Zolobetonyacheistyy i plotnyy) Moscow, Gosstrovizdat, 1960. 222p. 5,500 copies printed. 4p.

BR-SOV/5354
Zhurin, Vladimir Dmitriyevich, and A.P. Yufin
HYDROMECHANIZATION EQUIPMENT(Oborudovaniye gidromekhanizatsii) Moscow, Gosstroyizdat, 1960. 298p. 4,000 copies printed. 6p.

BR-SOV/5355
Krestovnikov, Aleksandr Nikolayevich, and Vilenin Naumovich Vigdorovich
CHEMICAL THERMODYNAMICS; SELECTED CHAPTERS FOR PYROMETALLURGISTS(Khimicheskaya termodinamika; izbrannyye glavy dlya pirometallurgov) Moscow, Metallurgizdat, 1961. 280p. Errata slip inserted. 5p.

BR-SOV/5356
Khromov, Boris Mikhaylovich
COMBINED RADIATION INJURIES(Kombinirovannyye luchevyye porazheniya) [Leningrad] Medgiz, 1959. 341p. 10,000 copies printed. 2p.

BR-SOV/5364
Krotova, Nataliya Aleksandrovna
ON CEMENTING AND ADHESION(O skleivanii i prilipanii) Moscow, Izd-vo AN SSSR, 1960. 167p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 10,000 copies printed. 2p.

BR-SOV/5369
USSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii
SANITARY REGULATIONS FOR WORKING WITH RADIOACTIVE SUBSTANCES AND WITH SOURCES OF IONIZING RADIATION(Sanitarnyye pravila raboty s radioaktivnymi veshchestvami i istochnikami ioniziruyushchikh izlucheniy) Moscow, Gosatomizdat, 1960. 117p. Errata slip inserted. 50,000 copies printed. 3p.

BR-CZECH/5373
Fremunt, Marcel, and others
CONSTRUCTION OF JIGS AND FIXTURES. PT. 2: WORK-HOLDING JIGS AND FIXTURES(Konstrukce přípravků. Díl 2: Přípravky upínací) Prague, SNTL, 1960. 319p. 2,000 copies printed. 5p.

BR-SOV/5376
Akademiya nauk Ukrayins'koyi RSR. Kyyiv. Instytut teploenerhetyky
HEAT EXCHANGE AND HYDRODYNAMICS(Teploobmin ta hidrodynamika) Kyyiv, Vydavnytstvo AN UkrSSR, 1959. 76p. (Series: Its: Zbirnyk prats', vyp. 16) 1,000 copies printed. 2p.

BR-CZECH/5379
Doležal, Vladimír
PLASTICS(Plastické hmoty) Praha, SNTL, 1961. 199p. 6,215 copies printed. 2p.

BR/CZECH/5380
Pouchlý, Julius, and Ivan Vavruch
PHYSICAL CHEMISTRY OF COLLOIDAL SYSTEMS (Fysikální chemie koloidních soustav) Praha, SNTL, 1960. 334p. 2,200 copies printed. 14p.

BR-SOV/5381
Blinov, Vasiliy Ivanovich, and Georgiy N. Khudyakov
DIFFUSION COMBUSTION OF LIQUIDS(Diffuzionnoye goreniye zhidkostey) Moscow, Izd-vo AN SSSR, 1961. 206p. Errata slip inserted. 2,500 copies printed. 2p.

BR-SOV/5384
Vinogradova, Yevgeniya Nikolayevna, and others
METHODS OF POLAROGRAPHIC AND AMPEROMETRIC ANALYSIS(Metody polyarograficheskogo i amperometricheskogo analiza) [Moscow] Izd-vo Moskovskogo univ., 1960. 279p. Errata slip inserted. 3,000 copies printed. 7p.

BR-SOV/5390
Lebedev, S. I.
PHOTOSYNTHESIS; CONTEMPORARY THEORIES (Fotosintez; sovremennyye predstavleniya) Kiyev, Izd-vo Ukr. akad. sel.-khoz. nauk, 1961. 157p. 2,500 copies printed. 2p.

BR-SOV/5394
Larionov, Anatoliy Konstantinovich, and Vsevolod Petrovich Anan'yev
PRINCIPLES OF MINERALOGY, PETROGRAPHY, AND GEOLOGY(Osnovy mineralogii, petrografii i geologii) Moscow, Gosizdat "Vysshaya shkola, "1961. 388p. Errata slip inserted. 7,000 copies printed. 8p.

BR-SOV/5399
Farafonov, Leonid Stepanovich
THE AUTOMATIC TELEPHONE SYSTEM OF A RAYON CENTER; THE 100/500 AUTOMATIC TELEPHONE SYSTEM(ATS rayonnogo tsentra; ATS 100/500) Moscow, Svyaz'izdat, 1960. 35p. (Series: Lektsii dlya rabotnikov rayonnykh kontor svyazi) 14,200 copies printed. 1p.

BR-SOV/5400
Shumelishskiy, Mark Grigor'yevich
EJECTOR REFRIGERATING MACHINERY(Ezhektornyye kholodil'nyye mashiny) Moscow, Gosторgizdat, 1961. 158p. 5,000 copies printed. 2p.

BR-SOV/5404
Murin, A. N., and others, eds.
RADIOCHEMISTRY AND THE CHEMISTRY OF NUCLEAR PROCESSES(Radiokhimiya i khimiya yadernykh protsessov) Leningrad, Goskhimizdat, 1960. 784p. Errata slip inserted. 13,000 copies printed. 8p.

BR-SOV/5406
Zhdanov, Yuriy Andreyevich
OUTLINE METHODOLOGY OF ORGANIC CHEMISTRY (Ocherki metodologii organicheskoy khimii) Moscow, Izd-vo "Vysshaya shkola, " 1960. 301p. Errata slip inserted. 4,700 copies printed. 2p.

BR-SOV/5411
Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th, Moscow, 1959.
PHYSICOCHEMICAL BASES OF STEEL MAKING; TRANSACTIONS OF THE FIFTH CONFERENCE ON THE PHYSICOCHEMICAL BASES OF STEELMAKING (Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii) Moscow, Metallurgizdat, 1961. 512p. Errata slip inserted. 8p.

BR-SOV/5424
Tsiolkovskiy, Konstantin Eduardovich
JOURNEY TO THE STARS; SCIENCE FICTION COLLECTION(Put'k zvezdam; sbornik nauchno-fantasticheskikh proizvedeniy) Moscow, Izd-vo AN SSSR, 1960. 351p. 50,000 copies printed. 2p.

BR-SOV/5425
Fedorov, N. D.
CONCISE HANDBOOK FOR THE ENGINEERING PHYSICIST: NUCLEAR PHYSICS. ATOMIC PHYSICS (Kratkiy spravochnik inzhenera-fizika: Yadernaya fizika. Atomnaya fizika) Moscow, Atomizdat, 1961. 507p. 28,000 copies printed. 6p.

BR-SOV/5428
Kostyuchenko, Yevgeniy Borisovich
CONDITIONS FOR THE ULTRAHIGH-SPEED DEPHOSPHORIZATION OF METALS BY SLAG(Usloviya sverkhskorostnogo obesfosforivaniya metalla shlakom) Khar'kov, Izd-vo Khar'kovskogo univ., 1960. 107p. 5,000 copies printed. 1p.

BR-SOV/5435
Kiselev, P. N., and others
PROBLEMS IN RADIATION BIOLOGY. V. 3: A COLLECTION OF WORKS DEDICATED TO THE SIXTIETH BIRTHDAY OF PROFESSOR M[IKHAIL] N[IKOLAYEVICH] POBEDINSKIY [DOCTOR OF MEDICINE] (Voprosy radiobiologii. t. III: Sbornik trudov, posvyashchennyy 60-letiyu so dnya rozhdeniya Professora M. N. Pobedinskogo) Leningrad. Tsentr. n-issl. in-t med. radiologii M-va zdravookhraneniya SSSR, 1960. 422p. 1,500 copies printed. 5p.

BR-SOV/5437
Meshcheryakov, Fedor Yeliseyevich
PRINCIPLES OF REFRIGERATION ENGINEERING (Osnovy kholodil'noy tekhniki) Moscow, Gostorgizdat, 1960. 375p. 10,000 copies printed. 6p.

BR-SOV/5454
Shishkov, Boris Ivanovich
PRECISION STAMPING IN INSTRUMENT MANUFACTURE(Tochnaya shtampovka v priborostroyenii) Moscow, 1960. 270p. 12,000 copies printed. 5p.

BR-SOV/5455
Il'yushin, Aleksey Antonovich, and Petr Matveyevich Ogibalov
ELASTIC-PLASTIC DEFORMATIONS OF HOLLOW CYLINDERS(Uprugo-plasticheskiye deformatsii polykh tsilindrov) [Moscow] izd-vo Mosk. univ., 1960. 224p. Errata slip inserted. 4,000 copies printed. 2p.

BR-SOV/5457
Nauchno-tekhnicheskoye obshchestvo mashinostroitel' noy promyshlennosti. Sektsiya metallovedeniya i termicheskoy obrabotki metallov.
PHYSICAL METALLURGY AND HEAT TREATMENT OF METALS; TRANSACTIONS OF THE SECTION OF PHYSICAL METALLURGY AND HEAT TREATMENT OF METALS(Metallovedeniye i termicheskaya obrabotka metallov; trudy Sektsii metallovedeniya i termicheskoy obrabotki metallov) no. 2. Moscow, Mashgiz, 1960. 242p. 6,000 copies printed. 2p.

BR-SOV/5458
Girshovich, Naum Grigor'yevich
HANDBOOK ON IRON CASTINGS(Spravochnik po chugunnomu lit'yu) 2d ed., rev. and enl. Moscow, Mashgiz, 1961. 800p. Errata slip inserted. 16,000 copies printed. 5p.

BR-SOV/5460
Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.
CERTAIN PROBLEMS IN THE MANUFACTURE OF TURBINES(Nekotoryye voprosy tekhnologii proizvodstva turbin) Moscow, Mashgiz, 1960. 398p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies printed. 6p.

BR-SOV/5461
Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
ASTRONOMICAL YEARBOOK OF THE USSR FOR 1962 (Astronomicheskiy yezhegodnik SSSR na 1962 g.) Moscow, Izd-vo Akademii nauk SSSR, 1960. 647p. Errata slip inserted. 2,000 copies printed. 8p.

BR-SOV/5463
Sovetskaya antarkticheskaya ekspeditsiya
SECOND MARINE EXPEDITION ON THE DIESEL-ELECTRIC SHIP "OB", 1956-57; GENERAL DESCRIPTION AND SCIENTIFIC RESULTS(Vtoraya morskaya ekspeditsiya na d/e "Ob", 1956-1957 gg.; obshcheye opisaniye i nauchnyye rezul'taty) Leningrad, Morskoy transport, 1959. 175p. (Series: Its: [Materialy] no. 5) Errata slip inserted. 1,200 copies printed. 3p.
Ph $1.10.

BR-SOV/5465
Danin, D.
THE FRIENDLY ATOM (Dobryy atom) Moscow, Foreign Languages Publishing House, 1960. 107p. No. of copies printed not given. 1p.

BR-SOV/5470
Polyakov, Isaak Fal'kovich, and Viktor Fedorovich Kovryzhkin
SETTING TIME STANDARDS FOR OPERATIONS IN SHIP-HULL BUILDING(Tekhnicheskoye normirovaniye korpusnykh rabot) Leningrad, Sudpromgiz, 1960. 480p. 3,800 copies printed. 2p.

BR-SOV/5471
Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii.
[METAL] ROLLING MILLS. [COLLECTION] 1) (Prokatnyye stany. [Sbornik] 1) Moscow, 1959. 272p. 2,000 copies printed. 1p.

BR-SOV/5473
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MINING INDUSTRY; AN ENCYCLOPEDIC HANDBOOK. V. 8: STATIONARY ELECTRO-MECHANICAL EQUIPMENT. ELECTRIC POWER SUPPLY TO MINES (Gornoye delo; entsiklopedicheskiy spravochnik. t. 8: Statsionarnoye elektromekhanicheskoye oborudovaniye. Elektrosnabzhenive shakht) Moscow, Gosgortekhizdat, 1960. 784p. Errata slip inserted. 18,500 copies printed. 8p.

BR-SOV/5474
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ORE-MINING INDUSTRY HANDBOOK. V. 2: UNDERGROUND OPERATIONS(Spravochnik po gornorudnomu delu. t. 2: Podzemnyye raboty) Moscow, Gosgortekhizdat, 1961. 855p. Errata slip inserted. 12,000 copies printed. 9p.

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PRACTICAL METHODS OF CALCULATING STATICALLY INDETERMINATE STRUCTURES(Prakticheskiye metody rascheta staticheski neopredelimykh sistem) Moscow, Gosstroyizdat, 1960. 184p. 6,000 copies printed. 2p.

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SURFACE ACTIVE HYDROPHILIC SUBSTANCES AND ELECTROLYTES IN CONCRETES(Poverkhnostno-aktivnyye gidrofil'nyye veshchestva i elektrolity v betonakh) Moscow, Gosstroyizdat, 1960. 165p. 3,000 copies printed. 2p.

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BR-SOV/5483
Tsytovich, Nikolay Aleksandrovich, and others
RECOMMENDATIONS ON METHODS FOR INVESTIGATING SETTLEMENT OF THAWING GROUND (Metodicheskiye rekomendatsii po issledovaniyu osadok ottaivayushchikh gruntov) Moscow, Izd-vo AN SSSR, 1961. 54p. Errata slip inserted. 1,500 copies printed. 1p.

BR-SOV/5485
Toryanik, Mikhail Stepanovich
OBLIQUE ECCENTRIC COMPRESSION AND OBLIQUE FLEXURE IN REINFORCED CONCRETE(Kosoye vnetsentrennoye szhatiye i kosoy izgib v zhelezobetone) 2d ed., rev. and enl. Kiyev, Gosstroyizdat, 1961. 155p. 2,200 copies printed. 3p.

BR-SOV/5486
Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnoye khozyaystvo SSSR. Riga, 1960.
RADIOACTIVE ISOTOPES AND NUCLEAR RADIATIONS IN THE NATIONAL ECOMOMY OF THE USSR; TRANSACTIONS OF THE SYMPOSIUM IN 4 VOLUMES. V. 1: GENERAL PROBLEMS IN THE UTILIZATION OF ISOTOPES; INSTRUMENTS WITH SOURCES OF RADIOACTIVE RADIATION; RADIATION CHEMISTRY; THE CHEMICAL AND PETROLEUM-REFINING INDUSTRY (Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy soveshchaniya v 4 tomakh. t. 1: Obshchiye voprosy primeneniya izotopov, pribory s istochnikami radioaktivnykh izlucheniy, radiatsionnaya khimiya, khimicheskaya i neftepererabatyvayushchaya promyshlennost') Moscow, Gostoptekhizdat, 1961. 340p. 4,140 copies printed. 6p.

BR-SOV/5488
Moscow, Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya.
MATERIALS IN CHEMICAL MACHINE BUILDING (Materialy v khimicheskom mashinostroyenii) Moscow, Informatsionno-izdatel'sky otdel, 1960. 143p. (Series: Its: Trudy, vyp. 34) 3,000 copies printed. 2p.

BR-SOV/5490
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FUNDAMENTALS FOR THE CALCULATION OF DIE-FORGING AND EXTRUSION PROCESSES(Osnovy rascheta protseesov shtampovki i pressovaniya) Moscow, Mashgiz, 1961. 339p. Errata slip inserted. 2p.

BR-SOV/5491
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THEORY OF PLASTIC DEFORMATION AND PRESS-WORKING OF METALS(Teoriya plasticheskoy deformatsii i obrabotka metallov davleniyem) Moscow, 1960. 341p. 13,000 copies printed. 5p.

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BR-SOV/5495
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INORGANIC ULTRAMICROANALYSIS(Neorganicheskiy ul'tramikroanaliz) Moscow, Izd-vo AN SSSR, 1960. 151p. Errata slip inserted. 5p.

BR-SOV/5496
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BR-SOV/5498
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BR-SOV/5499
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PRINCIPLES OF THE MECHANICS OF BODIES WITH A VARIABLE MASS AND ROCKET DYNAMICS; PT. 1 TEXTBOOK(Osnovy mekhaniki tel peremennoy massy i raketodinamiki; ch. I. Uchebnoye posobiye) Moscow, 1960. 225p. Errata slip inserted. 1,000 copies printed. 3p.

BR-SOV/5502
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THE STRUCTURE OF POLYMERS; ACCORDING TO NEW DATA(Kak postroyeny polimery; po novym dannym) Moscow, Izd-vo "Znaniye", 1961. 31p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IX, 1961: Fizika i khimiya, no. 5) 25,500 copies printed. 1p.

BR-SOV/5506
Gliberman, Anatoliy Yakovlevich, and Ayta Konstantinova Zaytseva
SILICON SOLAR BATTERIES(Kremniyevyye solnechnyye batarei) Moscow, Gosenergoizdat, 1961. 70p. (Series: Massovaya radiobiblioteka, vyp. 396) 35,000 copies printed. 2p.

BR-SLOV/5515
Hamak, L'ubos, and Martin Schnabl
TESTING AND CHECKING OF THE MOST FREQUENTLY USED BUILDING MATERIALS AND PRODUCTS (Skusanie a kontrola najpouzivanejsich stavebnych hmot a vyrobkov) Bratislava, Slovenski vydavatel'stvo technickej literatury, 1961. 303p. (Series: Edicia stavebnickej literatury) 1,500 copies printed. 8p.

BR-CZECH/5517
Kossler, Ivo
INFRARED SPECTROSCOPY IN CHEMICAL ANALYSIS Infracervena spektroskopie v chemicke analyze) Praha SNTL, 1960. 196p. Errata slip inserted. (Series: Moderni metody v chemicke laboratori, sv. 1) 1,200 copies printed. 3p.

BR-SOV/5518
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INSTRUMENTS AND REGULATORS IN HEAT-POWER AND CHEMICAL ENGINEERING(Teploenergeticheskiye i khimikotekhnologicheskiye pribory i regulyatory) Moscow, Mashgiz, 1961. 207p. Errata slip inserted. 8,500 copies printed. 4p.

BR-SOV/5521
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GAS CHROMATOGRAPHY IN PRACTICE(Plynova chromatografia v praxi) Bratislava, Slovenski vydavatel'stvo technickej literatury, 1961. 215p. (Series: Edicia chemickej literatury) 1,200 copies printed. 4p.

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MAGNETIC STRUCTURE OF FERROMAGNETIC SUBSTANCES; MATERIALS OF THE ALL-UNION CONFERENCE ON THE MAGNETIC STRUCTURE OF FERROMAGNETIC SUBSTANCES, HELD IN KRASNOYARSK 10 - 16 JUNE, 1958(Magnitnaya struktura ferromagnetikov; materialy Vsesoyuznogo soveshchaniya, 10 - 16 iyunya 1958 g., Krasnoyarsk) Novosibirsk, Izd-vo Sibirskogo otd. AN SSSR, 1960. 249p. Errata slip inserted. 1,500 copies printed. 5p.

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PL-480 Koks, Smola, Gaz (Poland) 1957 [v. 2] no. 1, p. 12-16.

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PL-480 Koks, Smola, Gaz (Poland) 1958, v. 3, no. 5, p. 180-184.

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Mono. Uravneniya Matematicheskoi Fisiki, Moscow, 1954, 444p.

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INFLUENCE OF PARTICLE SIZE OF THE CHARGE ON THE STRENGTH OF COKE.
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Mono. Teoriya Korrozii i Zashchity Metallov, Moscow, 1959, 591p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 7, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.